“Influence of Socio-Economic Status on Mental Toughness and Physical Fitness Variables of Sports Persons of North Karnataka”

Synopsis submitted to Mangalore University for the award of Degree of Doctor of Philosophy in Physical Education

Submitted By

Mr Rasoolsab
Reg. No: 181131207
Department of Physical Education
Mangalagangothri, Mangaluru-574199

Guide

Dr. PRASANNA B K
Assistant Director of Physical Education
Department of physical Education and sports
Mangalore University
Mangalagangothri, Mangaluru-574199

Submitted To

Department of PG Studies and research in Physical Education
and sports Mangalore University
Mangalagangothri, Mangaluru-574199

CERTIFICATE

This is to certify that **Rasoolsab** has completed the research work titled **"Influence of socio-economic status on mental toughness and physical fitness variables of sports persons of north Karnataka"**

This is the Final synopsis submitted to Doctoral Committee through Department of P.G studies and research in physical education and sports to Mangalore University, Karnataka, India, for the award of the Degree of Philosophy in Physical Education, which is based on the results of research work carried out by him under my guidance and supervision.

I further certify that this thesis or any part thereof has not formed the basis for any diploma /degree /fellowship or any other similar title, and the thesis represents independent work on the part of the candidate.

Signature of the Supervisor:

Dr. Prasanna B K
Assistant Director of Physical Education
Department of P.G studies and Research in Physical Education and sports
Mangalore University
Mangalagangothri, Mangaluru-574199

Declaration

I, **Mr Rasoolsab** hereby declare that this research work titled **""Influence of socio-economic status on mental toughness and physical fitness variables of sports persons of north Karnataka" of Doctor** of Philosophy (PhD) in Physical Education is the outcome of the original work undertaken and carried out by me under the guidance of Dr. Prasanna B .K Assistant Director of Physical Education, Department of P.G studies and research in Physical Education and sports, Mangalagangothri.

I further declare that the same has not previously been found the basis for the award of any other diploma/degree /fellowship or any other similar titles of this or any other University.

Date: **Signature of the Investigator**

CONTENTS

Chapter	Title	PAGE
I.	**Introduction** Statement of the problem Significance of the study Objectives of the study Hypothesis Delimitation Limitation	**5-11**
II.	**Review of the related literature**	**12-13**
III.	**Research methodology** Research design Sample design Tools used for the study	**14-19**
IV.	**Analysis and interpretation of the data**	**20-68**
V.	**Summary, conclusion and recommendations** Major findings Summary Conclusion Recommendation	**69-87**
	Reference	**88-95**

CHAPTER-1

INTRODUCTION

Sports have a high degree of social recognition which inspires sports men to develop the Necessary talents and capacities and related aspects of personality. Sports are a socializing agent which not only provides enjoyment but helps to develop the personality traits. It also improves the status of an individual in the society through recognition.

Economic stability of sports men and the sports participation is having inter connection. The performance of sports person always depends upon economic background and the income of the family. The standard of home life, the nutritious food, facilities, the leisure and other factors are aim deciding factors of an individual to participate in sports regularly with interest. If all these are not in good condition there will be dropouts among sportsmen.

The family is the major role on the attitude of the individual towards any activity. The acceptance and rejection of any activity by the individual is depending upon the impact on family income. Because the entire expenditure is borne by the family in the early days of any activity. In sports, to get the performance the man should start the training in his early days. Early days the Sports Persons is totally dependent on the family. Depending on the families' income and attitude, the Sports Persons goes to select the activity.

The Influence of Socio-Psychological Factors on sportsperson:

Man is just as truly a social as a biological creature and the socialization and development of the personality of an individual is a highly complex process. But the research undertaken all over the world indicate the fact that, the development of a personality of an individual is entirely influenced by his socio-economic cultural atmosphere to which he is exposed in his primitive years. Because, the social dimensions of the individual's personality are largely determined by his perception of social objects. His interactions and adjustments mainly depend on the interpersonal relations as well as the social, cultural, educational economic and psychological factors. However, there is evidence to suggest that environmental factors are of great significance in facilitating or inhibiting given needs, in conceiving the goals as well as in determining the extent to which one's needs are gratified. Support for this assumption comes from the studies on different aspects of socio-cultural disadvantage/deprivation, carried out in different parts of the world. When these conditions create force of isolation from society, social problems of personality development arise and a person may lose not only advantageous personality traits but suffer from the risk of stagnating in the development process that would lead to deprivation. Likewise, the sportsmen are also the products of socio-economic and cultural milieu in which they are born and brought up. And certainly these conditions and atmosphere would have a big impact on their psychological and personality traits, which could be, manifested not only his selection

of game or sport but also on his performance in the sport, which he has chosen. Because there are many psychological concomitants of poverty, which often impose severe handicaps on the

performance of sportsmen in the competition. Socio-economic disadvantages suffered by certain groups tend to have a detrimental effect not only on the general development of the individual but are reflected on the level of cognition and perceptual skills possessed by him. Deficiencies in the environment, either due to physical factors or induced through socioeconomic disadvantages have their impact through failure in providing the necessary experiential base essential for the development of the skills in question. It is because our social system is bound with caste, class lines, and norms segmented by great socio-economic disparities that have been sustained right through the ages by traditional and religious sanctions. Thus, it is established fact that the sportsmen exposed to the different socioeconomic and cultural background would develop different types of psychological and personality which might be advantageous or disadvantageous depends upon the atmosphere to which they are exposed. The below given studies of Indian context would justify the relationship between socio-economical, and cultural factors on the development of psychological traits.

The research study was carried to know Socio-economic difference of team and individual game players. For this present study, 50 team and 50 Individual game players were randomly selected as a subject for the present study. The Socio-economic status scale by Kapoor and Koacher (1994) was used to comprised team and individual game players, ratios has been used to compare the significantly socio-economic status difference between team and individual game players who were participating inter collegiate tournament held at vaidyanath college Parli in the year 2011 and 2012.

Importance Of 'sports psychology'

Psychology of Sport means applying Psychological theories and concepts to aspects of sports such as coaching and teaching. The sport psychologists use Psychological assessment techniques and intervention strategies in an effort to help individuals to achieve their optimal performance. While Sports Psychology is concerned with analyzing human behavior in various types of Sport settings, it also focuses on the mental aspects of performance. Psychology as a Behavioral Science has made its contribution for improving sport performance. It has helped the Coaches to coach more efficient athletes to perform more proficiently and efficiently. This psychological aspect on sport is gaining much attention among sports administrators. Bucher and Wuegt (1987), say that a rapidly growing area of interest in sports psychology concerns the use of stress management, procedures such as biofeedback and relaxation training to enhance athletic performance by reducing stress.

Socio-Economic Status (SES)

Sociology of sports is rapidly growing applied sciences. Sports as a social institution or social system as it is sometime called, is an important concern for all the sport sociologists. The sport sociologist is interested in why man gets involved in sports and what effects his involvement in sports has on other aspect of life when analyzing a family's SES, the household income, earners' education and occupation are examined as well as combined income, versus with an individual, when their own

attributes are assessed. Socio-economic status in terms of primary conditions and characteristics is determined through vocation, income and wealth, home and its location, education, activities and associations.

As per Wikipedia online encyclopedia (2011), socioeconomic status (SES) is an economic and sociological combined total measure of a person's work experience and of an individual's or family's economic and social position relative to others, based on income, education, and occupation. When analyzing a family's SES, the household income, earners' education, and occupation are examined, as well as combined income, versus an individual, when their own attributes are assessed.

Socio-economic status is typically broken into three categories, High SES, Middle SES, and Low SES to describe the three areas a family or an individual may fall into. When placing a family or individual into one of these categories any or all of the three variables (income, education, and occupation) can be assessed. A fourth variable, wealth, may also be examined when determining socioeconomic status.

These three psychological variables do not work single-handedly, however they somehow cohesively affect a sportsperson's performance. Thus the task is not just to study their solo affects on the performance of Judokas, but also inter-relationships in addition to their ratio of effectiveness over the performance. Thus the present study considered all the sub-variables of attitude in to three different socio-economic statuses:

High SES, Middle SES and Low SES along with their relationships. Each one of the above stated variables may be affected by the others and may also affect the others; hence there is a strong relationship between the achievement motivation, attitude and socio-economic status. As a result there is strong obligation to study the relationships of these variables and their intensity.

Socioeconomic status (SES) is often indicated as a factor that influences physical activity and associated health outcomes. It has been recognized that socio-economic factors play a vital role in an individual's performance in sports. It make-up of an individual plays an important role in their achievements in every field of life. Considerable researches have been conducted on the socio-economic status of sports persons. But very few research studies are available in published from a socio-economic status of sports persons.

A family's socioeconomic status is based on family income, parental education level, parental occupation, and social status in the community (such as contacts within the community, group associations, and the community's perception of the family), note Demarest, Reisner, Anderson, Humphrey, Farquhar, and Stein (1993). Families with high socioeconomic status often have more success in preparing their children for school/college because they typically have access to a wide range of resources to promote and support students' development.

Sports performance is greatly affected by socio-economic factor which has created many distinct classes in the society. Due to this, some get best facilities and some get none or are forced to compromise with the minimum. The impacts of socio-economic-status depend upon the available facilities. It is often seen that socio-economic status factor (says the hope of getting a certificate and pair of shoes if one, shows good performance) influence the sportsperson to take more interest in the games. The above is not the only factor which affects sports performance. Hence there are so many factors in this regard but these above mentioned are the most affecting factors. That is why the researcher mentioned these.

The high socio economic status would be highly advantageous for an individual as he enjoys the better standard of living, quality education, high income, positive self image, high dignity and status in the society, good training facilities and the subsequent high self confidence which invariably helps his/her to gain positive personality traits and higher achievement motivation. Whereas, an individual of low socio-economic status would inherit the motivational and personality characteristics like low achievement motivation, low aspiration level, low expectation, neuroticism, insecurity, rigidity, conformity, anxiety, extroversion, alienation, low self image, past orientation, lack of future orientation, external attribution for success and internal attribution for failure and use of dysfunctional coping strategies like escape, helplessness, hopelessness and denial.

It has been recognized that socio-economic factors play a vital role in an individual's performance in sports. The Socio-economic status make-up of an individual plays an important role in their achievements in every field of life. Considerable research has been conducted on the socio-economic status of sports persons. But very few research studies are available in published from a socio-economic status of games like sportsmen and non-sportsmen.

Now it is clear that the sports performance is depending upon motor abilities as well as anthropometric characteristics and sociological factors. The aim of actual research was to determine the anthropometric characteristics, socio-economic factors and motor abilities college level students that is sportsmen and non-sportsmen and find if there is a any statistically significant difference. Hence the present study.

Mental Toughness:

Mental toughness is a concept it's commonly referred to in the sports world. Coaches and athletes indicate that 50% of performance are mental, and that the concept of being mentally-tough is one of the most important characteristics that an athlete can possess (Loehr, 1986). At elite levels of athletics, differences in physical ability between the athletes are minimal (Moran, 2004). The psychological attributes play is a key role, regardless of the sport, in linking athletes with success (Williams & Krane, 2001). Much of the initial research done in the area of mental toughness involved interviewing athletes and coaches on their opinions of the characteristics of mentally tough

performers. These individuals often cited similar qualities, and these were compiled to create profiles of mentally-tough performers (Jones, Hanton, & Connaughton, 2002; Bull, Shambrook, James, & Brooks, 2005). In the literature, mental toughness has been used interchangeably with other concepts in some instances, for example, with the concepts of resiliency and determination (Moran, 2004). However, mental toughness is a distinct construct.

STATEMENT OF THE PROBLEM:

Influence of socio-economic status on mental toughness and physical fitness variables of selected sports person's of north Karnataka universities. With age group from 19 to 25 years.

GENERAL OBJECTIVES OF THE STUDY:

1. To evaluate the relationship between socio-economic status of sports person studying in North Karnataka with component of mental-toughness

2. To evaluate the relationship between socio-economic status of sports person studying in North Karnataka with component of physical fitness.

3. To evaluate the relationship between mental-toughness of sports person studying in North Karnataka sports person with component of physical fitness.

HYPOTHESES OF THE STUDY:

1) No significant difference between levels of socio-economic status (High, Above average, and Average) with mental toughness scores of sportspersons of North Karnataka
2) No significant difference between levels of socio-economic status (High, Above average, and Average) with the physical fitness variable, i.e., Pull-up scores of sportspersons of North Karnataka
3) No significant difference between levels of socio-economic status (High, Above average, and Average) with the physical fitness variable, i.e., Shuttle run (in a sec) scores of sportspersons of North Karnataka
4) No significant difference between levels of socio-economic status (High, Above average, and Average) with the physical fitness variable, i.e., Standing broad jump (meters)scores of sportspersons of North Karnataka
5) No significant difference between levels of socio-economic status (High, Above average, and Average) with the physical fitness variable, i.e., Bent-knee-sit up (number) scores of sportspersons of North Karnataka
6) No significant difference between levels of socio-economic status (High, Above average, and Average) with the physical fitness variable, i.e., 50-yard dash (sec)scores of sportspersons of North Karnataka

7) No significant difference between levels of socio-economic status (High, Above average, and Average) with physical variables, i.e., 600-yard dash (sec)scores of sportspersons of North Karnataka
8) No significant relationship between mental toughness with socio-economic status and its dimensions scores (i.e. education, profession, monthly income, total wealth in cash or debts, property, surrounding locality, and social class) of sportspersons of North Karnataka

9) No significant relationship between the physical fitness variable, i.e., Pull-ups (N) with socio-economic status and its dimensions scores (i.e. education, profession, monthly income, total wealth in cash or debts, property, surrounding locality, and social class) of sportspersons of North Karnataka
10) No significant relationship between the physical fitness variable, i.e., Shuttle run (in a sec) with socio-economic status and its dimensions scores (i.e.education, profession, monthly income, total wealth in cash or debts, property, surrounding locality, and social status) of sportspersons of North Karnataka
11) No significant relationship between the physical fitness variable, i.e., Standing broad jump (meters) with socio-economic status and its dimensions scores (i.e.education, profession, monthly income, total wealth in cash or debts, property, surrounding locality, and social status) of sportspersons of North Karnataka
12) No significant relationship between the physical fitness variable, i.e., Bent-knee-sit up (number) with socio-economic status and its dimensions scores (i.e.education, profession, monthly income, total wealth in cash or debts, property, surrounding locality, and social status) of sportspersons of North Karnataka
13) No significant relationship between the physical fitness variable, i.e., 50-yard dash (sec) with socio-economic status and its dimensions scores (i.e.education, profession, monthly income, total wealth in cash or debts, property, surrounding locality, and social status) of sportspersons of North Karnataka
14) No significant relationship between the physical fitness variable, i.e., 600-yard dash (sec) with socio-economic status and its dimensions scores (i.e.,education, profession, monthly income, total wealth in cash or debts, property, surrounding locality, and social status) of sportspersons of North Karnataka

SIGNIFICANCE OF THE STUDY:

1. The study may facilitate to find out the level of mental toughness among sports person in North Karnataka universities and will assist to find the remedy to improve the level of mental toughness

2. The study will provide the insight of the fitness level of sports person in North Karnataka universities

3. The finding of the study would help to analyses the background of the students enrolled from different socio-economic status in North Karnataka universities

4. The analysis of the study would help to develop programmes of different fitness components for the North Karnataka universities.

5. It may throw light on various conditions that affect the participation of Sports person at inters-university level.

6. It enables to formulate remedial measures to set right the Socio-Economic Problems which affect the sports participation at North Karnataka universities level.

7. The study may be significant as it is possible to enumerate the role of Socio-Economic condition of the players and it is possible to find out to what extent it would influence the participation.

8. It may help the future investigators to carryout similar studies in other aspects which affect the performance in sports and games along with Socio-Economic conditions.

DELIMITATIONS OF THE STUDY:

1. The Sample is delimited to Sportsperson participated at Inter University sports participation of north Karnataka Universities.

2. The present study is delimited to sports person age group 19 to 25 years only.

3. The study is delimitated to physical fitness only.

4. The study is delimited to psychology Mental Toughness only.

5. The present study is delimited to socio-economic status only.

LIMITATIONS OF THE STUDY:

1. Diet, Regular practice, Training, Behaviour, Climatic conditions and meteorological factors were not taken into consideration.

3. The research scholar will have to consider the responses of the subjects to the Socio Economic Status questionnaire and scale of different level considering the moods and the emotional status of the subjects may influence their responses.

DEFINITION OF THE TERMS:

CHAPTER-II

REVIEW OF RELATED LITERATURE

Studying relevant literature is an essential step towards getting a clear idea of what has been done about the issue under study. Such a review gives an in-depth and clear overall field perspective. The researcher has made a serious and scholarly attempt to go through the related literature, and this chapter describes a brief review of the study relating to the present problem

REVIEW OF SOCIO-ECONOMIC STATUS RELATED LITERA:

Vinod Kumar (2016) A study of socio-economic status of basketball and volleyball players . The main objectives of the study were to know the socio-economic status of both Basketball and volleyball inter collegiate players of S G G S Khalsa College Mahilpur. Simple Random sampling method was used for the study and according 60 players participating in Inter-collegiate Tournaments were selected as samples. A self-made socio-economic status scale was used for data collection and percentage method was applied for the statistical analysis at the 0.05 level of significance. On the basis of statistical analysis both it was found that both of Basketball and volleyball players of intercollegiate Tournament

Surjit Singh (2014):- The study was conducted to investigate the Socio-Economic Status difference between of Cricket and Hockey Players of Jammu & Kashmir. For the present study 50 crickets and 50 hockey players were selected who participated at least state level tournament. The sample of this study was selected through purposive sampling technique. A structured interviewer administered questionnaire (Aggarwal, 2005) was used to collect the relevant information. Result: There is no significance difference between cricket and Hockey Players at 0.05 level of significance.

REVIEW OF PSYCHOLOGICAL RELATED LITERA:

Kumar &Kumar,(2014) studied on comparison of aggressive behavior (category wise) among sports person and non-sports person. The purpose of the present study was to find out the comparison of aggressive Behavior category among sports person and Non-sports person of Bhiwani District. The sample of the present study was conducted on 250 (125 Teach) male sports person and non sports person of Bhiwani District were selected as a sample of the study and who had participated in national level. The age ranged between 18 to 25 years constituted the subjects of the study. The data was collected by standardized tools Dr. G.C. Pati Aggression test and using statistically analyzed‘t’ test method. Aggression is “behavior in which there is intention to injure another”. It was resultant of a number of forces acting both within and upon the individual at the same time. It was concluded that it

is evident that sports person were high aggressive behavior than non-sports person in (Category wise) aggression.

Patel et al., (2011) compared mental toughness among kabaddi players of different level. 72 male kabaddi players competing in All India kabaddi tournament were selected as sample. The sample was further divided into two groups as per performance outcomes in competition. Kabaddi players from first, second and third place were grouped in as successful players while rest were grouped in as unsuccessful players. Psychological performance inventory prepared by Loehr, 1986 was used to measure mental toughness. Result revealed that the successful kabaddi players scored significantly higher on all subscales of mental toughness and the significant differences were observed between two groups on all subscales of mental toughness.

REVIEW OF PHYSICAL FITNESS RELATED LITERA:

Rao & Rao, (2015) investigated the study of Spiking in Volleyball which depends upon factors such as speed, explosive strength, and atmospheric conditions. The objective of this study was to assess the impact of selected physical fitness components and different atmospheric temperatures. The researcher focuses on environmental factors, temperature plays a vital role in the performance of a player. Ten players are taken as subjects and they have undergone training for seven days in the morning session in acceleration of speed for a distance of 50 yards dash for 10 times with rests in between. They were training in Basketball throw for 10 times with rests in between to enhance explosive shoulder strength and standing broad jump for 10 times in two parts to boost the strength of legs. After the training 10 male players of collegiate level aged 18- 21participated in the spiking skill of volleyball in the morning session at 7.00 am and in the afternoon session at 2.00 pm. Long jump pit was utilized for standing broad jump for which assistance of three students was taken. The study used Explosive strength and Spiking. The research vitalized the t-test only After the analysis of the data it was concluded that footwork plays a very important part in the approach and arm and leg synchronization towards greater momentum in hitting the ball. It was found that in making the arm thrust in a vertical position on contact, greater force is exerted as well as higher vertical distance. It has been observed that the sequence of steps in spiking shall be accurate otherwise the impact gets diluted. Furthermore, it was found that atmospheric temperature in the afternoon at 2.00 pm at 37 degrees celsius made an impact on the performance which was not at all good for better performance during summer, so training in speed, explosive strength was very crucial while acquiring the spiking skill.

CHAPTER -III

METHODOLOGY

Research methodology involves the systematic procedure by which the researcher starts from the initial identification of the problem to its final conclusion. The role of the methodology is to carry out the research work in a scientific and valid manner.

The purpose of this study was to investigate the influence of socio-economic status on mental toughness and physical fitness variables of sports persons of north karnataka.This chapter discusses the methodology that was used in the study. It describes in detail about the selection of subjects, selection of variables, selection of tests, orientation to the subjects, competency of the tester, reliability of the instruments, reliability of the data, pilot study, and training programme, administration of tests, collection of data, experimental design and statistical procedure.

Sample size:

The total sample consists of 300 sportsmen belonging to male sportsperson and the sample ages ranging from 19-25 years were selected randomly.

Selection of Variables:

The investigator is highly interested in observing the influence of selected socio-economic status parameters and mental toughness on student physical fitness. In the present study, the investigator has selected the following variables:

Independent Variables:

- Socio-economic status.

Dependent Variables:

- Psychological parameters, mental toughness.
- Physical fitness.

Collection of Data:

The study pertaining to “Influence of socio-economic status on mental toughness and physical fitness variables of selected sports person’s of north Karnataka universities” was carried out in the background of research method and exploratory methods, nature of game and sex are also independents variables of the study. Therefore the sample was administered with the standardized scales and tools and questionnaires. On the whole sportsperson and participating in different game who are participating Karnataka Universities sportsperson.

Selection of Tools:

- Socio Economic Status Scale constructed by Meenakshi Sharma, 1985.
- Mental Toughness questionnaire constructed by Dr Alan Goldberg1998.
- Physical Fitness test American Alliance for Health, Physical Education, and Recreation & Dance (AAHPERD) Test1985.

Statistical technique:

Design of the study

Data Collection Tools

The following variables were used for consistent evaluation of the variables

Socio economic status

- Education,
- Profession,
- Monthly income,
- Total wealth in cash or debts,
- Property,
- Surrounding locality and
- Social status

Response or Dependent variable

-Mental toughness

-Physical fitness variables

- Pull-up,
- Shuttle run (in sec),
- Standing broad jump (meters),
- Bent-knee-sit up (sit up),
- 50 yard dash (sec) and
- 600-yard dash (sec))

Sampling of the study

The total sample consists of 300 sportsmen belonging to male sportsperson and the sample age ranges from 19-25 years were selected randomly.

METHOD OF STUDY:

SOCIO ECONOMIC STATUS SCALE

Genesis

Coleman, The Questionnaire which has been designed for this purpose is a point scale; points ranging between 3 and 10 depending upon the component of the variable under assessment. The scale is comprehensive in nature and does not discriminate between rural / urban of male/female subjects. It has been standardized on a sample of 1127 rural /urban students of classes VIII through XII.

Reliability

On 153 boys of class XI in a Senior School, the Test retest reliability has been found to be r= 0.82 with a time interval of 10 days.

Validity

Two samples of N1=37 and N2= 42 of students of a reputed public school and an ordinary government school respectively were taken to have an idea of the validity of the scale. The average scores of these two groups of students were found to be 116.8 and 54.8 with S.D.'s of 35.9 and 20.1 and differentiating' standing at 9.29, significant at 0.01 it shows the discriminating power of the scale.

Administration and Scoring

The SESS is given to students in groups of 15 to 20 and the purpose of the instrument is explained. They are asked to put a tick mark (✓) against the statement which fit them and a cross mark (x) which do not fit them, for each tick mark (✓) given.

Part-1 (Education)

Count the tick (✓) against each serial number and record the total in the lost columan.suppose father and mother are both PhD's and one sister is also PhD against serial No.1 there will be 3 ticks. Multiply 3 by 10 to obtain a score of 30.the total of ticks against serial No.2 will be multiplied by 9 and against serial No.3 by 8 and so on. The range of scores will be from 1 to 50

Part-2(Profession)

The scoring method as used in part-2 is to be repeated. The maximum score will be 50 and minimum will be one.

Part-3(Monthly income)

Award a score of 10 for the tick (✓) against (a) nine for the tick against (b) and so on. The maximum score will be 10 and minimum will be one.

Part- 4. There are three columns in this section. Marks are for each tick. The maximum score will be 30. The minimum may be 03.

Part-5 Here the questions are on point scales. Maximum score will be 22 and minimum will be 03.

Part-6(Surrounding or locality) This is again a point scale.

Part-7 The maximum score will be 25 and minimum will be 05.

Category of SES Status

Sino.	Category	Score
1	High	105 and above
2	Average	Between 65 to104
3	low	Below65

Mental toughness:

To measure the mental toughness, data were collected from consecutive eligible subjects by administering the questionnaire prepared by Dr. Alan Goldberg (1998). The test consists of 30 statements related to mental toughness of a sports person, which they answered by marking "x" mark to the "true" or "false" column. They are designed to analyze sports person's reactions to different situations.

Method of scoring

All 30 items were scored according to the key developed by Dr. Alan Goldberg. For each item, response indicated was either true or false. For any response indicated as "true", the tested subject has been awarded the score of one and zero for "false" The sum of the entire positive ("x") response was the total mental toughness score of the sports person.

Following psychological sub-variables of mental toughness were analyzed as per the responses given against various questions responsible for each sub-variable:

- Rebound ability (question no.1 to 6)
- Ability to handle pressure (question no.7 to 12)
- Concentration (question no.13 to 18)
- Confidence (question no.19 to 24)
- Motivation (question no.25 to 30)

Interpretation of Overall Score of Mental Toughness

Overall Score:

Code 01: < 22: Need to start putting more time into the mental trg area.

Code 02: 23-25: Average to moderate skill in mental toughness.
Code 03: 26-30: Strength in overall mental toughness.

Administering the tests:

A.A.H.P.E.R Youth fitness test:

The AAHPER youth fitness test was devised by American Alliance for health, physical Education and Recreation in Washington. This test consists of seven test items which is adopted in this particular study to measure high and low physical fitness of Boys and girls of Government, Corporation and Private School. The test items administered are as given in Table

Physical Fitness Test Items

Sino	Name of the test items	Physical fitness components	sex
1	Pull-up	Arm and shoulder strength	Male
2	Shuttle run	Speed and agility	Male
3	Standing broad jump	Explosive strength for legs	Male
4	Bent-knee-sit up	Abdominal strength	Male and female
5	50 yard dash	speed	Male and female
6	600-yard dash	Cardio-vascular endurance	Male and female
7	Softball throw	Explosive strength of arms	Male and female

Statistical Techniques Used

1. In pursuance of the General objectives-1, the one way ANOVA followed by Tukeys multiple posthoc procedures were used find the significance difference between socio-economic status with mental toughness and physical fitness variables (i.e. pull-up, shuttle run (in sec), standing broad jump (meters), bent-knee-sit up (sit up), 50 yard dash (sec) and 600-yard dash (sec)) of sports persons of North Karnataka
2. In pursuance of the General objectives-2, the Karl Pearson's correlation coefficient technique has been applied to find the relationships between socio-economic status of sports person studying in North Karnataka with mental-toughness. Further, the obtained values were tested for significance using t-test
3. In pursuance of the General objectives-3, the Karl Pearson's correlation coefficient technique has been applied to find the relationships between socio-economic status of sports person studying in North Karnataka with physical fitness and its components. Further, the obtained values were tested for significance using t-test

4. In pursuance of the General objectives-4, the Karl Pearson's correlation coefficient technique has been applied to find the relationships between mental-toughness of sports person studying in North Karnataka with physical fitness and its components. Further, the obtained values were tested for significance using t-

Chapter-IV

DATA ANALYSIS AND INTERPRETATIONS

The present chapter consists of the presentation and analysis of the empirical findings of the data analysis with various statistical procedures used. In the current research, the author collected data on socio-economic status and its dimensions (i.e., education, profession, monthly income, total wealth in cash or debts, the property surrounding locality, and social status), mental toughness and physical fitness variables (i.e., pull-up, shuttle run (in a sec), standing broad jump (meters), bent-knee-sit up (numbers), 50-yard dash (sec) and 600-yard dash (sec)) from sports persons of North Karnataka. Suitable statistical techniques have been used, such as sample mean, standard deviation, one factor way of variance followed by Tukey's multiple posthoc procedures, and Karl Pearson's correlation coefficient.

At the start of the analysis presented, the SES is considered as an independent variable; for convenience of good statistical analysis, the SES scores were divided into three levels, i.e., High SES, Above average SES, and Average SES were compared with mental toughness and physical fitness variables (i.e., pull-up, Shuttle run (in sec), standing broad jump (meters), bent-knee-sit up (numbers), 50-yard dash (sec) and 600-yard dash (sec)) of sportspersons of North Karnataka through one factor way of variance followed by Tukey's multiple posthoc procedures. The relationships between SES and its dimensions (i.e., education, profession, monthly income, total wealth in cash or debts, the property surrounding locality, and social status) with mental toughness and physical fitness variables (i.e., pull-up, shuttle run (in a sec), standing broad jump (meters), bent-knee-sit up (numbers), 50-yard dash (sec) and 600-yard dash (sec)) scores of sportspersons of North Karnataka were established by Karl Pearson's correlation coefficient.

The principle of usefulness, the different sections of this study chapter have been organized under different headings.

Differential analysis:

In this section, we compared the levels of socio-economic status,i.e., High SES, Above average SES, and Average SES were compared with mental toughness and physical fitness variables (i.e., pull-up, shuttle run (in sec), standing broad jump (meters), bent-knee-sit up (numbers), 50-yard dash (sec) and 600-yard dash (sec)) of sportspersons of North Karnataka through one factor way of variance followed by Tukey's multiple posthoc procedures with null hypotheses were tested. The results are presented in the tables.

Null Hypothesis (H_0): No significant difference between levels of socio-economic status (High, Above average, and Average) with mental toughness scores of sportspersons of North Karnataka

Alternative Hypothesis (H_1): There is a significant difference between levels of socio-economic status (High, Above average, and Average) with mental toughness scores of sportspersons of North Karnataka

To test H_0, the one-factor ANOVA analysis was performed, and the results are presented in the following table.

Table: nu 1.1 Outcome of one factor ANOVA between levels of socio-economic status (High, Above average, and Average) with mental toughness scores of sportspersons of North Karnataka

Sources of variation	Degrees of freedom	Sum of squares	Mean sum of squares	F-value	p-value
Between SES	2	2240.45	1120.22	220.7272	0.0001, S
Within SES	297	1507.32	5.08		
Total	299	3747.77			

The above table presents the outcome of one factor ANOVA between levels of socio-economic status (High, Above average, and Average) with mental toughness scores of sportspersons of North Karnataka. It showed a significant difference between three levels of socioeconomic status (High, Above average, and Average) and mental toughness scores of sportspersons of North Karnataka ($F=220.7272, p=0.0001$) at a 5 percent significance level. Hence, the H_0 is rejected, and the H_1 is accepted. It means that the sports persons of North Karnataka belong to different levels of socio-economic status (High, Above average, and Average) and have different mental toughness scores.

Further, the results are presented in the following table to know and compare the pairs of socioeconomic status(High, Above average, and Average) by applying the Tukeys multiple posthoc procedures.

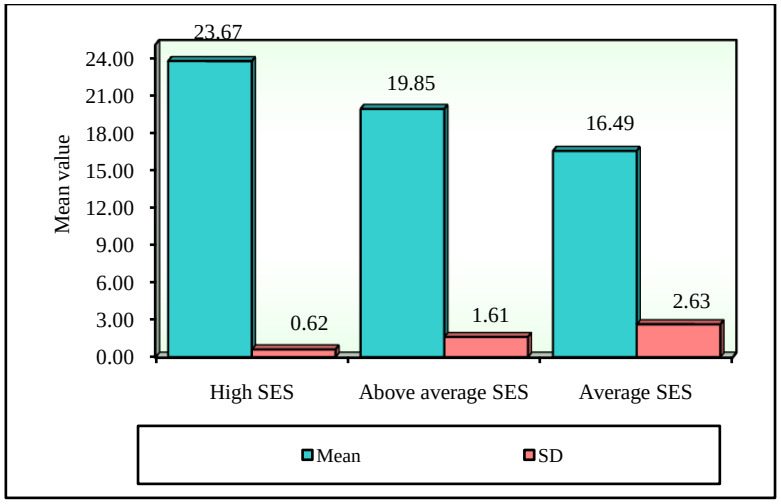
Table: nu 1.2 Pair-wise comparisons of levels of socio-economic status (High, Above average, and Average) with mental toughness scores of sportspersons of North Karnataka by Tukeys multiple posthoc procedures

SES groups	High SES	Above average SES	Average SES
Mean	23.67	19.85	16.49
SD	0.62	1.61	2.63
High SES	-		
Above average SES	P=0.0001,S	-	
Average SES	P=0.0001,S	P=0.0001,S	-

The results from the above tablecan are understood that,

- The sports persons of North Karnataka belong to High SES, and above average SES level differs significantly with mean mental toughness scores at a 5 percent significance level. It means that the sports persons of North Karnataka who belong to High SES (23.67±0.62) have significant and higher mean mental toughness scores compared to sportspersons who belong to above average SES (19.85±1.61).
- The sports persons of North Karnataka belong to High SES, and the average SES level differs significantly with mean mental toughness scores at a 5 percent significance level. It means that the sports persons of North Karnataka who belong to High SES (23.67±0.62) have significant and higher mean mental toughness scores compared to sportspersons who belong to average SES (16.49±2.63).
- The sports persons of North Karnataka belong to Above average SES, and average SES level differs significantly with mean mental toughness scores at a 5 percent significance level. It means that the sports persons of North Karnatakabelong to Above average SES (19.85±1.61) and have significant. Higher mean mental toughness scores compared to sportspersons who belong to average SES (16.49±2.63). The mean scores are presented in the following figure.

Figure: nu 1 Comparison between levels of socio-economic status (High, above average, and Average) with mental toughness scores of sportspersons of North Karnataka



Null Hypothesis (H_0): No significant difference between levels of socio-economic status (High, Above average, and Average) with the physical fitness variable, i.e., Pull-up scores of sportspersons of North Karnataka

Alternative Hypothesis (H_1): There is a significant difference between levels of socio-economic status (High, Above average, and Average) with the physical fitness variable, i.e., Pull-up scores of sportspersons of North Karnataka

To test H_0, the one-factor ANOVA analysis was performed, and the results are presented in the following table.

Table: nu 2.1 Outcome of one factor ANOVA between levels of socio-economic status (High, Above average, and Average) with physical fitness variable, i.e., Pull-up scores of sportspersons of North Karnataka

Sources of variation	Degrees of freedom	Sum of squares	Mean sum of squares	F-value	p-value
Between SES	2	23.38	11.69	0.4653	0.6284,NS
Within SES	297	7463.36	25.13		
Total	299	7486.75			

The above table presents the outcome of one factor ANOVA between levels of socio-economic status (High, Above average, and Average) with the physical fitness variable, i.e., Pull-up scores of sportspersons of North Karnataka. It showed no significant difference between the three levels of socioeconomic status (High, Above average, and Average) with the physical fitness variable, i.e., Pull-up scores of sportspersons of North Karnataka (F=0.4653,p=0.6284) at 5 percent significance level. Hence, the H_0 is accepted, and H_1 is rejected. It means that the sports persons of North Karnataka belong to different levels of socio-economic status (High, Above average, and Average) and have similar Pull-up scores.

Further, the results are presented in the following table to know and compare the pairs of socioeconomic status(High, Above average, and Average) by applying the Tukeys multiple posthoc procedures.

Table: Pair-wise comparison of levels of socio-economic status (High, Above average, and Average) with physical fitness variable, i.e., Pull-up scores of sportspersons of North Karnataka by Tukeys multiple posthoc procedures

Table: nu 2.2 Pair-wise comparisons of levels of socio-economic status (High, Above average, and Average) with physical fitness variable, i.e., Pull-up scores of sportspersons of North Karnataka by Tukeys multiple posthoc procedures

SES groups	High SES	Above average SES	Average SES
Mean	39.82	40.77	40.23
SD	4.97	5.17	4.98
High SES	-		
Above average SES	P=6040,NS	-	
Average SES	P=0.8645,NS	P=0.7682,NS	-

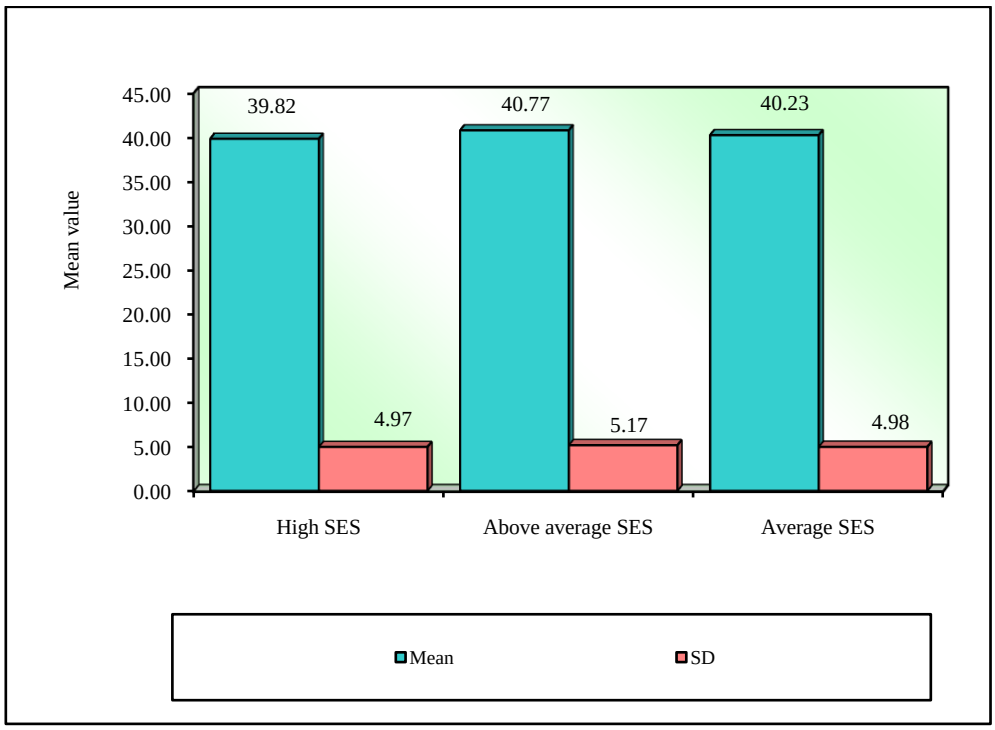
The results from the above tablecan be understood that,

- The sports persons of North Karnataka who belong to High SES and above average SES levels do not differ significantly with the mean physical fitness variable, i.e., Pull-up scores at a 5 percent

significance level. It means that the sports persons of North Karnataka belong to High SES (39.82±4.97) and Above average SES (40.77±5.17) and have similar physical fitness variables, i.e., Pull-up scores.

- The sports persons of North Karnataka belong to High SES, and the average SES level does not differ significantly fromthe mean physical fitness variable, i.e., Pull-up scores at a 5 percent significance level. It means that the sports persons of North Karnataka belong to High SES (39.82±4.97) and average SES (40.23±4.98) and have similar physical fitness variables, i.e., Pull-up scores.
- The sports persons of North Karnataka belong to Above average SES, and the average SES level does not differ significantly fromthe mean physical fitness variable, i.e., Pull-up scores at a 5 percent significance level. It means that the sports persons of North Karnataka belong to Above average SES (40.77±5.17) and average SES (40.23±4.98) and have similar physical fitness variables, i.e., Pull-up scores. The mean scores are presented in the following figure.

Figure:2 Comparison between levels of socio-economic status (High, Above average, and Average) with the physical fitness variable, i.e., Pull-up scores of sportspersons of North Karnataka



Null Hypothesis (H_0): No significant difference between levels of socio-economic status (High, Above average, and Average) with the second physical fitness variable, i.e., Shuttle run (in a sec) scores of sportspersons of North Karnataka

Alternative Hypothesis (H_1): There is a significant difference between levels of socio-economic status (High, Above average, and Average) with Shuttle run (in a sec)scores of sportspersons of North Karnataka

To test H_0, the one-factor ANOVA analysis was performed, and the results are presented in the following table.

Table: nu 3.1 Outcome of one factor ANOVA between levels of socio-economic status (High, Above average, and Average) with physical fitness variable, i.e., Shuttle run (in a sec) scores of sportspersons of North Karnataka

Sources of variation	Degrees of freedom	Sum of squares	Mean sum of squares	F-value	p-value
Between SES	2	3018.33	1509.16	100.3088	0.0001, S
Within SES	297	4468.42	15.05		
Total	299	7486.75			

The table above presents the one-factor ANOVA outcome. It showed that a significant difference was observed between three levels of socioeconomic status (High, Above average, and Average) with the physical fitness variable, i.e., Shuttle run (in a sec) scores of sportspersons of North Karnataka (F=100.3088, p=0.0001) at 5 percent significance level. It means that the sports persons of North Karnataka belong to different levels of socio-economic status (High, Above average, and Average) and have different physical fitness variables, i.e., Shuttle run (in sec) scores. Hence, the H0 is rejected, and H1 is accepted.

Further, the results are presented in the following table to know and compare the pairs of socioeconomic status(High, Above average, and Average) by applying the Tukeys multiple posthoc procedures.

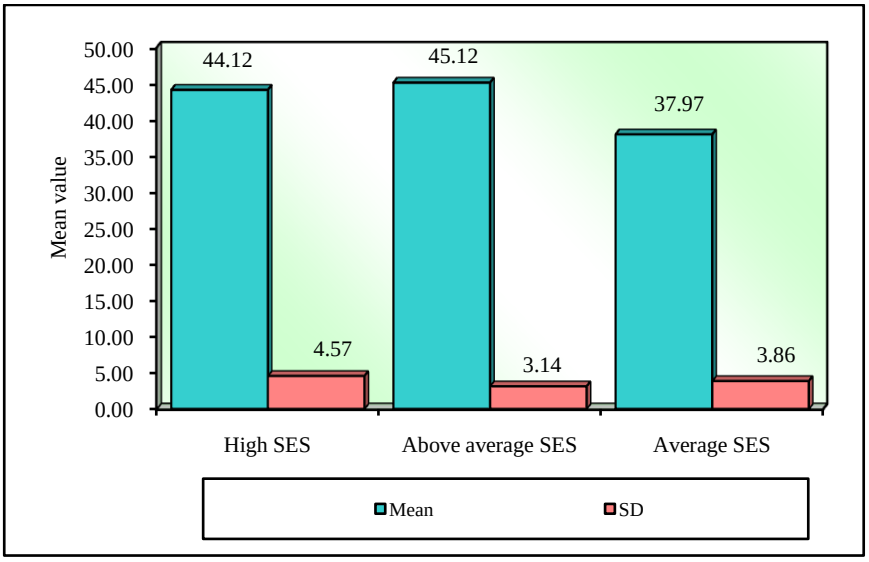
Table: nu 3.2 Pair-wise comparisons of levels of socio-economic status (High, Above average, and Average) with physical fitness variable, i.e., Shuttle run (in a sec) scores of sportspersons of North Karnataka by Tukeys multiple posthoc procedures

SES groups	High SES	Above average SES	Average SES
Mean	44.12	45.12	37.97
SD	4.57	3.14	3.86
High SES	-		
Above average SES	P=0.3922,NS	-	
Average SES	P=0.0001,S	P=0.0001,S	-

The results of the above table clearly show the followings:

- The sports persons of North Karnataka who belong to High SES and above average SES levels do not differ significantly with the mean physical fitness variable, i.e., Shuttle run (in sec) scores at a 5 percent significance level. It means that the sports persons of North Karnataka belong to High SES (44.12±4.57) and Above average SES (45.12±3.14) and have similar physical fitness variables, i.e., Shuttle run (in sec) scores.
- The sports persons of North Karnataka belong to High SES, and the average SES level differs significantly fromthe mean physical fitness variable, i.e., Shuttle run (in sec) scores at a 5 percent significance level. It means that the sports persons of North Karnataka belong to High SES (44.12±4.57) and have significant and higher physical fitness variables, i.e., Shuttle run (in sec) scores as compared to sports persons belong to average SES (37.97±3.86).
- The sports persons of North Karnataka belong to above average SES, and the average SES level differs significantly fromthe mean physical fitness variable, i.e., Shuttle run (in sec) scores at a 5 percent significance level. It means that the sports persons of North Karnataka belong to High SES (45.12±3.14) and have significant and higher physical fitness variables, i.e., Shuttle run (in sec) scores as compared to sports persons belong to average SES (37.97±3.86). The mean scores are presented in the following figure.

Figure: nu 3 Comparison between levels of socio-economic status (High, Above average, and Average) with physical fitness variable, i.e., Shuttle run (in a sec) scores of sportspersons of North Karnataka



Null Hypothesis (H_0): No significant difference between levels of socio-economic status (High, Above average, and Average) with physical fitness variable, i.e., Standing broad jump (meters)scores of sportspersons of North Karnataka

Alternative Hypothesis (H_1): There is a significant difference between levels of socio-economic status (High, Above average, and Average) with the physical fitness variable, i.e., Standing broad jump (meters)scores of sportspersons of North Karnataka

To test H_0, the one-factor ANOVA analysis was performed, and the results are presented in the following table.

Table: nu 4.1 Outcome of one factor ANOVA between levels of socio-economic status (High, Above average, and Average) with physical fitness variable, i.e., Standing broad jump (meters)scores of sportspersons of North Karnataka

Sources of variation	Degrees of freedom	Sum of squares	Mean sum of squares	F-value	p-value
Between SES	2	20.59	10.29	165.6296	0.0001, S
Within SES	297	18.46	0.06		
Total	299	39.05			

The above table presents the outcome of one factor ANOVA between levels of socio-economic status (High, Above average, and Average) with the physical fitness variable, i.e., Standing broad jump (meters) scores of sportspersons of North Karnataka. It showed that a significant difference was observed between three levels of socioeconomic status (High, Above average, and Average) with the physical fitness variable, i.e., Standing broad jump (meters) scores of sportspersons of North Karnataka (F=165.6296,p=0.0001) at 5 percent significance level. It means that the sports persons of North Karnataka belong to different levels of socio-economic status (High, Above average, and Average) and have different physical fitness variables, i.e., Standing broad jump (meters) SCO. Hence, the H0 is rejected, and H1 is accepted.

Further, the results are presented in the following table to know and compare the pairs of socioeconomic status(High, Above average, and Average) by applying the Tukeys multiple posthoc procedures.

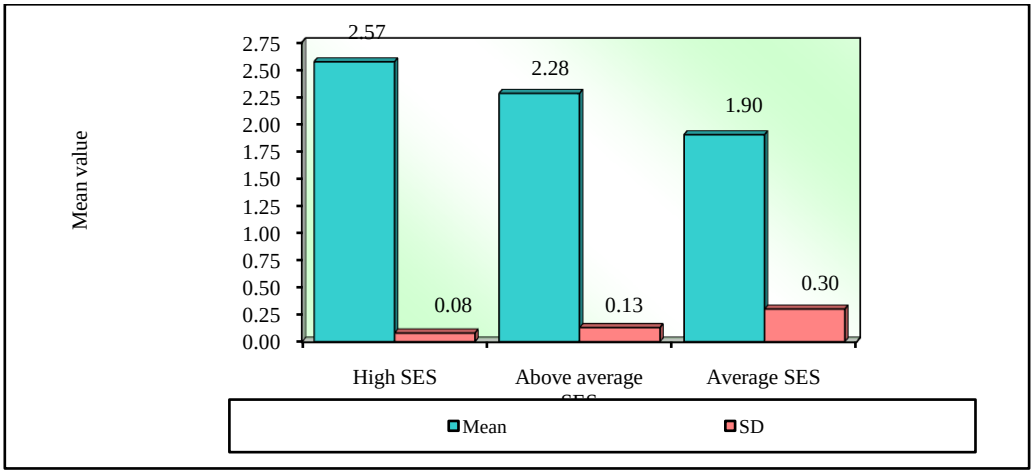
Table: nu 4.2 Pair-wise comparisons of levels of socio-economic status (High, Above average, and Average) with physical fitness variable, i.e., Standing broad jump (meters) scores of sportspersons of North Karnataka by Tukeys multiple posthoc procedures

SES groups	High SES	Above average SES	Average SES
Mean	2.57	2.28	1.90
SD	0.08	0.13	0.30
High SES	-		
Above average SES	P=0.0001,S	-	
Average SES	P=0.0001,S	P=0.0001,S	-

The results from the above tablecan are understood that,

- The sports persons of North Karnataka belong to High SES, and above average SES level differs significantly fromthe mean physical fitness variable, i.e., Standing broad jump (meters) scores at a 5 percent significance level. It means that the sports persons of North Karnataka belong to High SES (2.57±0.08) and have significant and higher physical fitness variables, i.e., Standing broad jump (meters) scores as compared to sports persons belong to Above average SES (2.28±0.13).
- The sports persons of North Karnataka belong to High SES, and the average SES level differs significantly from the mean physical fitness variable, i.e., Standing broad jump (meters) scores at a 5 percent significance level. It means that the sports persons of North Karnataka who belong to High SES (2.57±0.08) have significant and higher physical fitness variables, i.e., Standing broad jump (meters) scores as compared to sports persons belonging to average SES (1.90±0.30).
- The sports persons of North Karnataka belong to Above average SES, and average SES level differs significantly fromthe mean physical fitness variable, i.e.,., Standing broad jump (meters) scores at a 5 percent significance level. It means that the sports persons of North Karnataka belong to Above average SES (2.28±0.13) and have significant and higher physical fitness variables, i.e., Standing broad jump (meters) scores as compared to sportspersons who belong to average SES (2.57±0.08). The mean scores are presented in the following figure.

Figure: 4 Comparison between levels of socio-economic status (High, Above average, and Average) with physical fitness variable, i.e., Standing broad jump (meters) scores of sportspersons of North Karnataka



Null Hypothesis (H_0): No significant difference between levels of socio-economic status (High, Above average, and Average) with the physical fitness variable, i.e., Bent-knee-sit up (numbers) scores of sportspersons of North Karnataka

Alternative Hypothesis (H_1): There is a significant difference between levels of socio-economic status (High, Above average, and Average) with the physical fitness variable, i.e., Bent-knee-sit up (numbers) scores of sportspersons of North Karnataka

To test H_0, the one-factor ANOVA analysis was performed, and the results are presented in the following table.

Table: nu 5.1 Outcome of one factor ANOVA between levels of socio-economic status (High, Above average, and Average) with physical fitness variable, i.e., Bent-knee-sit up (sit up) scores of sportspersons of North Karnataka

Sources of variation	Degrees of freedom	Sum of squares	Mean sum of squares	F-value	p-value
Between SES	2	2267.52	1133.76	131.4234	0.0001, S
Within SES	297	2562.15	8.63		
Total	299	4829.67			

The above table presents the outcome of one factor ANOVA between levels of socio-economic status (High, Above average, and Average) with the physical fitness variable, i.e., Bent-knee-sit up (numbers) scores of sportspersons of North Karnataka. It showed that a significant difference was observed between three levels of socioeconomic status (High, Above average, and Average) with the physical fitness variable, i.e., Bent-knee-sit up (numbers) scores of sportspersons of North Karnataka (F=131.4234,p=0.0001) at 5 percent significance level. It means that the sports persons of North Karnataka belong to different levels of socio-economic status (High, Above average, and Average). It has different physical fitness variables, i.e., Bent-knee-sit-up (numbers) scores. Hence, the H0 is rejected, and H1 is accepted.

Further, the results are presented in the following table to know and compare the pairs of socioeconomic status(High, Above average, and Average) by applying the Tukeys multiple posthoc procedures.

Table: nu 5.2 Pair-wise comparisons of levels of socio-economic status (High, above average, and Average) with physical fitness variable, i.e., Bent-knee-sit up (numbers) scores of sportspersons of North Karnataka by Tukeys multiple posthoc procedures

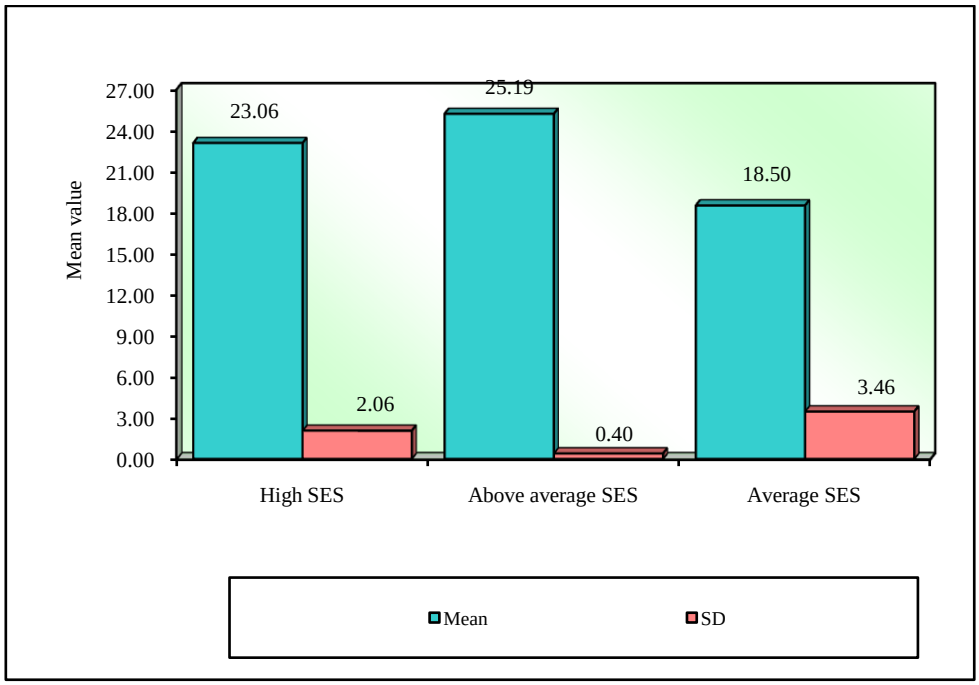
SES groups	High SES	Above average SES	Average SES
Mean	23.06	25.19	18.50
SD	2.06	0.40	3.46
High SES	-		
Above average SES	P=0.0006,S	-	
Average SES	P=0.0001,S	P=0.0001,S	-

The results from the above tablecan be understood that,

The sports persons of North Karnataka belong to High SES, and above average SES level differs significantly fromthe mean physical fitness variable, i.e., Bent-knee-sit up (numbers) scores at a 5 percent significance level. It means that the sports persons of North Karnataka belong to High SES (23.06±2.06) and have significant and more minor physical fitness variables, i.e., Bent-knee-sit up (numbers) scores as compared to sports persons belong to Above average SES (25.19±0.40).

- The sports persons of North Karnataka belong to High SES, and the average SES level differs significantly with the mean physical fitness variable, i.e., Bent-knee-sit up (numbers) scores at a 5 percent significance level. It means that the sports persons of North Karnataka who belong to High SES (23.06±2.06) have significant and higher physical fitness variable, i.e., Bent-knee-sit up (numbers) scores as compared to sports persons belonging to average SES (18.50±3.46).
- The sports persons of North Karnataka belong to Above average SES, and average SES level differs significantly fromthe mean physical fitness variable, i.e., Bent-knee-sit up (numbers) scores at a 5 percent significance level. It means that the sports persons of North Karnataka who belong to Above average SES (25.19±0.40) have significant and higher physical fitness variables, i.e., Bent-knee-sit up (numbers) scores as compared to sports persons belonging to average SES (18.50±3.46). The mean scores are presented in the following figure.

Figure:nu 5 Comparison between levels of socio-economic status (High, Above average, and Average) with the physical fitness variable, i.e., Bent-knee-sit up (numbers) scores of sportspersons of North Karnataka



Null Hypothesis (H_0): No significant difference between levels of socio-economic status (High, Above average, and Average) with the physical fitness variable, i.e., 50-yard dash (sec)scores of sportspersons of North Karnataka

Alternative Hypothesis (H_1): There is a significant difference between levels of socio-economic status (High, Above average, and Average) with the physical fitness variable, i.e., 50-yard dash (sec)scores of sportspersons of North Karnataka

To test H_0, the one-factor ANOVA analysis was performed, and the results are presented in the following table.

Table: nu 6.1 Outcome of one factor ANOVA between levels of socio-economic status (High, Above average, and Average) with physical fitness variable, i.e., 50-yard dash (sec)scores of sportspersons of North Karnataka

Sources of variation	Degrees of freedom	Sum of squares	Mean sum of squares	F-value	p-value
Between SES	2	464.45	232.23	90.6871	0.0001, S
Within SES	297	760.54	2.56		
Total	299	1225.00			

The above table presents the outcome of one factor ANOVA between levels of socio-economic status (High, Above average, and Average) with the physical fitness variable, i.e., 50-yard dash (sec) scores of sportspersons of North Karnataka. It showed that a significant difference was observed between three levels of socioeconomic status (High, Above average, and Average) with the physical fitness variable, i.e., 50-yard dash (sec) scores of sportspersons of North Karnataka ($F=90.6871, p=0.0001$) at 5 percent significance level. It means that the sports persons of North Karnataka belong to different levels of socio-economic status (High, Above average, and Average) and have different physical fitness variables, i.e., 50-yard dash (sec) scores. Hence, the H0 is rejected, and H1 is accepted.

Further, to know and compare the pairs of levels of socio-economic status(High, Above average, and Average) by applying the Tukeys multiple posthoc procedures, the results are displayed in the table below

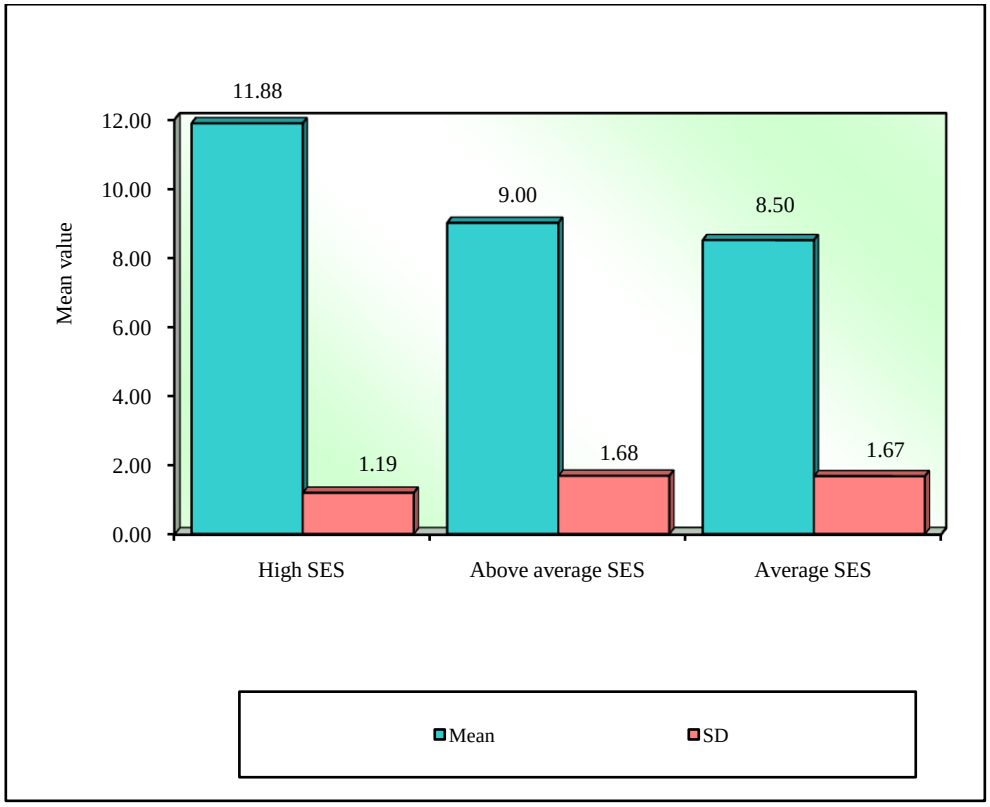
Table: nu 6.2 Pair-wise comparisons of levels of socio-economic status (High, Above average, and Average) with physical fitness variable, i.e., 50-yard dash (sec) scores of sportspersons of North Karnataka by Tukeys multiple posthoc procedures

SES groups	High SES	Above average SES	Average SES
Mean	11.88	9.00	8.50
SD	1.19	1.68	1.67
High SES	-		
Above average SES	P=0.0001,S	-	
Average SES	P=0.0001,S	P=0.1136,NS	-

The results from the above tablecan are understood that,

- The sports persons of North Karnataka belong to High SES, and above average SES levels differ significantly with the physical fitness variable, i.e., 50-yard dash (sec) scores at a 5 percent significance level. It means North Karnataka's sports persons belong to High SES (11.88±1.19). It has significant and higher physical fitness variables, i.e., 50-yard dash (sec) scores, compared to sportspersons who belong to above-average SES (9.00±1.68).
- The sports persons of North Karnataka belong to High SES, and above average SES levels differ significantly with the physical fitness variable, i.e., 50-yard dash (sec) scores at a 5 percent significance level. It means that the sports persons of North Karnataka belong to High SES (11.88±1.19) and have significant and higher physical fitness variables, i.e., 50-yard dash (sec) scores as compared to sports persons belong to average SES (8.50±1.67).
- It means that the sports persons of North Karnataka belong to above average SES (9.00±1.68) and average SES (8.50±1.67) and have similar physical fitness variables, i.e., 50-yard dash (sec) scores. The sports persons of North Karnataka belong to High SES, and above average SES levels do not differ significantly with the physical fitness variable, i.e., 50-yard dash (sec) scores at a 5 percent significance level. The mean scores are presented in the following figure.

Figure:6 Comparison between levels of socio-economic status (High, Above average, and Average) with the physical fitness variable, i.e., 50-yard dash (sec) scores of sportspersons of North Karnataka



Null Hypothesis (H_0): No significant difference between levels of socio-economic status (High, Above average, and Average) with physical variables, i.e., 600-yard dash (sec)scores of sportspersons of North Karnataka

Alternative Hypothesis (H_1): There is a significant difference between levels of socio-economic status (High, Above average, and Average) with physical variables, i.e., 600-yard dash (sec)scores of sportspersons of North Karnataka

To test H_0, the one-factor ANOVA analysis was performed, and the results are presented in the following table.

Table:nu 7.1 Outcome of one factor ANOVA between levels of socio-economic status (High, Above average, and Average) with physical variables, i.e., 600-yard dash (sec)scores of sportspersons of North Karnataka

Sources of variation	Degrees of freedom	Sum of squares	Mean sum of squares	F-value	p-value
Between SES	2	25856.48	12928.24	208.7648	0.0001, S
Within SES	297	18392.40	61.93		
Total	299	44248.88			

The above table presents the outcome of one factor ANOVA between levels of socio-economic status (High, Above average, and Average) with the physical fitness variable, i.e., 600-yard dash (sec) scores of sportspersons of North Karnataka. It showed that a significant difference was observed between three levels of socioeconomic status (High, Above average, and Average) with the physical fitness variable, i.e., 600-yard dash (sec) scores of sportspersons of North Karnataka (F=208.7648,p=0.0001) at 5 percent significance level. It means that the sports persons of North Karnataka belong to different levels of socio-economic status (High, Above average, and Average) and have different physical fitness variables, i.e., 600-yard dash (sec) scores. Hence, the H0 is rejected, and H1 is accepted. Further, the results are presented in the following table to know and compare the pairs of socioeconomic status (High, Above average, and Average) by applying the Tukeys multiple posthoc procedures

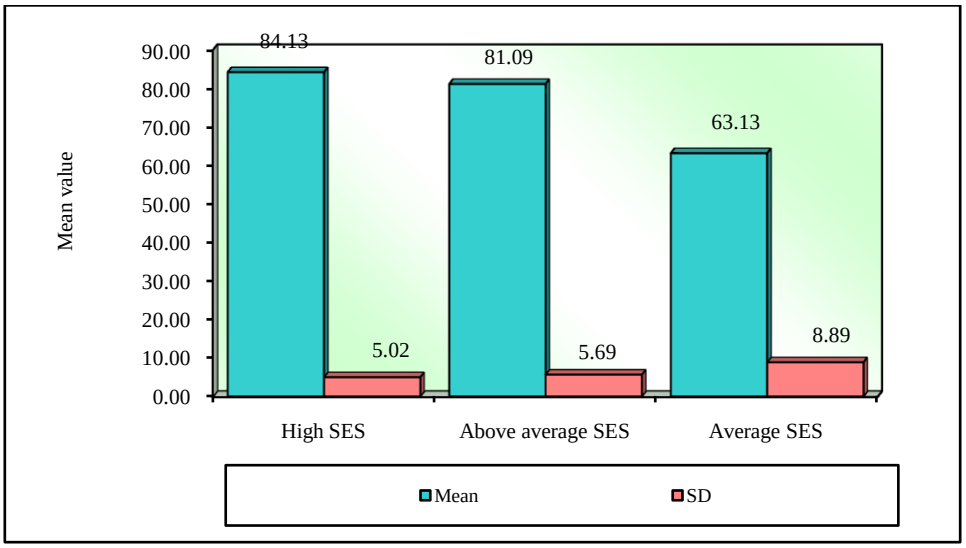
Table: nu 7.2 Pair-wise comparisons of levels of socio-economic status (High, Above average, and Average) with physical fitness variable, i.e., 600-yard dash (sec) scores of sportspersons of North Karnataka by Tukeys multiple posthoc procedures

SES groups	High SES	Above average SES	Average SES
Mean	84.13	81.09	63.13
SD	5.02	5.69	8.89
High SES	-		
Above average SES	P=0.1227,NS	-	
Average SES	P=0.0001,S	P=0.0001,S	-

The results from the above tablecan be understood that,

- The sports persons of North Karnataka belong to High SES, and above average SES levels do not differ significantly with the physical fitness variable, i.e., 600-yard dash (sec) scores at a 5 percent significance level. It means that the sports persons of North Karnataka belong to High SES (84.13±5.02) and Above average SES (81.09±5.69) and have similar physical fitness variables, i.e., 600-yard dash (sec) scores.
- The sports persons of North Karnataka belong to High SES, and the average SES level differs significantly from the physical fitness variable, i.e., 600-yard dash (sec) scores at a 5 percent significance level. It means that the sports persons of North Karnataka who belong to High SES (84.13±5.02) have significant and higher physical fitness variables, i.e., 600-yard dash (sec) scores, as compared to sportspersons who belong to average SES (63.13±8.89).
- The sports persons of North Karnataka belong to Above average SES, and average SES level differs significantly from the physical fitness variable, i.e., 600-yard dash (sec) scores at a 5 percent significance level. It means that the sports persons of North Karnataka belong to Above average SES (81.09±5.69) and have significant and higher physical fitness variables, i.e., 600-yard dash (sec) scores as compared to sports persons belong to average SES (63.13±8.89). The mean scores are presented in the following figure.

Figure:nu 7 Comparison between levels of socio-economic status (High, Above average, and Average) with the physical fitness variable, i.e., 600-yard dash (sec) scores of sportspersons of North Karnataka



Correlation analysis

In the present study, the socio-economic status (SES) is taken as only one independent variable and many dependent variables, including mental toughness and physical fitness variables (i.e., pull-up, shuttle run (in a sec), standing broad jump (meters), bent-knee-sit up (numbers), 50-yard dash (sec) and 600-yard dash (sec)) of sportspersons of North Karnataka. Because to find out the relationship between the dependent variables with the independent variables, the correlation coefficients were obtained. The correlation coefficient is calculated by using KarlPearson's correlation coefficient method, and it is mathematically expressed in the following way:

$$r = \frac{\sum xy - n\bar{x}\bar{y}}{\sqrt{(\sum x^2 - n\bar{x}^2)(\sum y^2 - n\bar{y}^2)}}$$

If the r-value is zero, it indicates no correlation between the two variables. If the r-value is positive, it means that one variable value increases with an increase in another variable value. If the r-value is negative, it indicates that one variable value increases with a decrease in another variable value.

Null hypothesis (H_0): No significant relationship between mental toughness with socioeconomic status and its dimensions scores (i.e.education, profession, monthly income, total wealth in cash or debts, property, surrounding locality, and social class) of sportspersons of North Karnataka

Alternative hypothesis (H_1): A significant relationship between mental toughness with socio-economic status and its dimensions scores (i.e.education, profession, monthly income, total wealth in cash or debts, property, surrounding locality, and social class) of sportspersons of North Karnataka

To test H_0, Karl Pearson's correlation coefficient method was accomplished,and the results are displayed in the table below.

Table: 8.1 Results of Karl Pearson's correlation coefficient between mental toughness with socio-economic status and its dimensions scores (i.e.education, profession, monthly income, total wealth in cash or debts, property, surrounding locality, and social class) of sportspersons of North Karnataka

Variables	The correlation coefficient between mental toughness with			
	Correlation coefficient (r)	Degrees of freedom	t-value	p-value
Total SES	0.8535	298	28.2796	0.0001,S
Education	0.6294	298	13.9813	0.0001,S
Profession	0.0591	298	1.0228	0.3072,NS
Monthly income	-0.0992	298	-1.7218	0.0862,NS
Total wealth in cash or debts	0.5223	298	10.5726	0.0001,S
Property	0.5880	298	12.5490	0.0001,S
Surrounding locality	0.3022	298	5.4718	0.0001,S
Social status	0.2019	298	3.5588	0.0004,S

The results of the above table clearly show the followings:

- A significant and positive correlation was observed between mental toughness and socio-economic status scores of sportspersons of North Karnataka (r=0.8535, p=0.0001) at a 5 percent significance level. It means that the mental toughness and socio-economic status scores of sportspersons of North Karnataka are dependent on each other. In other words, the increases (decreases) in the socio-economic status scores of sportspersons of North Karnataka are supported bythe increase (decrease) in their mental toughness scores. Hence, the H0 is rejected, and H1 is accepted.
- A significant and positive correlation was observed between mental toughness and dimension of socioeconomic status, i.e.,education scores of sportspersons of North Karnataka (r=0.6294, p=0.0001) at a 5 percent significance level. It means that the mental toughness and dimension of socioeconomic status, i.e., education scores of sportspersons of North Karnataka, are dependent

on each other. In other words, the increases (decreases) in socio-economic status, i.e., education scores of sportspersons of North Karnataka, are supportingan increase (decrease) in their mental toughness scores. Hence, the H0 is rejected, and H1 is accepted.

- No significant and positive correlation was observed between mental toughness and dimension of socioeconomic status, i.e.,professional scores of sportspersons of North Karnataka (r=0.0591, p=0.3072) at a 5 percent significance level. Hence, the H_0 is accepted, and H_1 isrejected. It means that the mental toughness and dimension of socioeconomic status, i.e.,profession scores of North Karnataka sports persons, are independent. In other words, the increases (decreases) in socio-economic status, i.e., professional scores of sportspersons of North Karnataka, are not supporting an increase (decrease) in their mental toughness scores.
- No significant and negative correlation was observed between mental toughness and dimension of socioeconomic status, i.e.,monthly income scores of sportspersons of North Karnataka (r=-0.0992, p=0.0862) at a 5 percent significance level. Hence, the H_0 is accepted, and H_1 isrejected. It means that the mental toughness and dimension of socioeconomic status, i.e., monthly income scores of North Karnataka sports persons, are independent. In other words, the no significant increases (decreases) in the socio-economic status dimension, i.e., North Karnataka sportspersons' monthly income scores, are not supporting an increase (decrease) in their mental toughness scores.
- A significant and positive correlation was observed between mental toughness and the dimension of socioeconomic status, i.e.,total wealth in cash or debt scores of sportspersons of North Karnataka (r=0.5223, p=0.0001) at a 5 percent significance level. It means that the mental toughness and dimension of socioeconomic status, i.e., total wealth in cash or debt scores of sportspersons of North Karnataka, are dependent on each other. In other words, the increases (decreases) in the dimension of socioeconomic status, i.e., total wealth in cash or debt scores of sportspersons of North Karnataka,is as supporting in an increase (decrease) in their mental toughness scores. Hence, the H0 is rejected, and H1 is accepted.
- A significant and positive correlation was observed between mental toughness and dimension of socioeconomic status, i.e.,property scores of sportspersons of North Karnataka (r=0.5880, p=0.0001) at a 5 percent significance level. It means that the mental toughness and socio-economic status scores of sportspersons of North Karnataka are dependent on each other. In other words, the increases (decreases) in socio-economic status, i.e., property scores of sportspersons of North Karnataka,aresupportedbyan increase (decrease) in their mental toughness scores. Hence, the H0 is rejected, and H1 is accepted.
- A significant and positive correlation was observed between mental toughness and dimension of socioeconomic status, i.e.,surrounding locality scores of sportspersons of North Karnataka (r=0.3022, p=0.0001) at a 5 percent significance level. It means that the mental toughness and dimension of socioeconomic status, i.e., surrounding locality scores of sportspersons of North

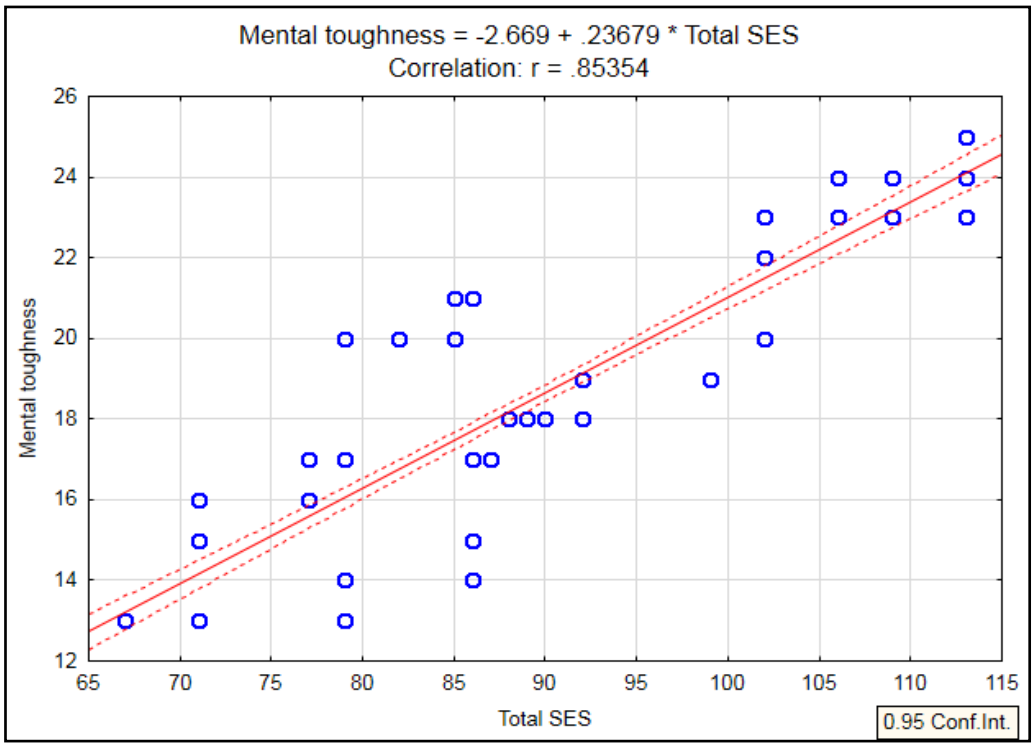
Karnataka, are dependent on each other. In other words, the increases (decreases) in socio-economic status, i.e., surrounding locality scores of sportspersons of North Karnataka,is as supporting an increase (decrease) in their mental toughness scores. Hence, the H0 is rejected, and H1 is accepted.

- A significant and positive correlation was observed between mental toughness and the dimension of socioeconomic status, i.e.,social status scores of sportspersons of North Karnataka (r=0.2019, p=0.0004) at a 5 percent significance level. It means that the mental toughness and dimension of socioeconomic status, i.e., social status scores of sportspersons of North Karnataka, are dependent on each other. In other words, the increases (decreases) in socio-economic status, i.e., social status scores of sportspersons of North Karnataka, is as supporting in an increase (decrease) in their mental toughness scores. Hence, the H0 is rejected, and H1 is accepted.

Therefore, the following linear regression or prediction equation of mental toughness by socio-economic status of sportspersons of North Karnataka is formulated and given by Mental toughness (Y)=-2.669+0.2367*SES

Further, the relationship between mental toughness and socioeconomic status score sports persons of North Karnataka is also presented in the following diagram.

Figure: nu 8 Scatter diagram showing the correlation coefficient between mental toughness with socio-economic status score sports persons of North Karnataka



Null hypothesis (H_0): No significant relationship between physical fitness variable, i.e., Pull-ups (N) with socio-economic status and its dimensions scores (i.e.education, profession, monthly income, total wealth in cash or debts, property, surrounding locality, and social class) of sportspersons of North Karnataka

Alternative hypothesis (H_1): A significant relationship between physical fitness variable, i.e., Pull-ups (N) with socio-economic status and its dimensions scores (i.e.education, profession, monthly income, total wealth in cash or debts, property, surrounding locality, and social class) of sportspersons of North Karnataka

To test H_0, Karl Pearson's correlation coefficient method was utilized,and the results are displayed in the table below.

Table: 9.1 Karl Pearson's correlation coefficient between physical fitness variable, i.e., Pull-ups (N) withsocio-economic status and its dimensions scores

Variables	The correlation coefficient between physical fitness variable, i.e., Pull-ups (N) with			
	Correlation coefficient (r)	Degrees of freedom	t-value	p-value
Total SES	0.9150	298	39.1581	0.0001,S
Education	0.5760	298	12.1643	0.0001,S
Profession	0.0022	298	0.0377	0.9700,NS
Monthly income	0.1042	298	1.8091	0.0715,NS
Total wealth in cash or debts	0.4484	298	8.6594	0.0001,S
Property	0.6934	298	16.6124	0.0001,S
Surrounding locality	0.3549	298	6.5541	0.0001,S
Social status	0.3679	298	6.8307	0.0001,S

The results of the above table show the followings:

- A significant and positive correlation was observed between the physical fitness variables, i.e., Pull-ups (N),and socioeconomic status scores of sportspersons of North Karnataka (r=0.9150, p=0.0001) at a 5 percent significance level. It means that the physical fitness variable, i.e., Pull-ups (N) and socio-economic status scores of sportspersons of North Karnataka, are dependent on each other. In other words, the increases (decreases) in socio-economic status scores of sportspersons of North Karnatakais as supported by the increase (decrease) in their physical fitness variable, i.e., Pull-ups (N) scores. Hence, the H0 is rejected, and H1 is accepted.
- A significant and positive correlation was observed between the physical fitness variable, i.e., Pull-ups (N),and the dimension of socioeconomic status, i.e.,education scores of sportspersons of North Karnataka (r=0.5760, p=0.0001) at a 5 percent significance level. It means thatthe physical fitness variable, i.e., Pull-ups (N), and the dimension of socioeconomic status, i.e., education scores of sportspersons of North Karnataka, are dependent on each other. In other words, the increases (decreases) in the dimension of socioeconomic status, i.e., education scores of sportspersons of North Karnatakais, supporting an increase (decrease) in their physical fitness variable, i.e., Pull-ups (N Hence, the H0 is rejected, and H1 is accepted.) scores.
- No significant and positive correlation was observed between the physical fitness variable, i.e., Pull-ups (N),and the dimension of socioeconomic status, i.e.,professional scores of sportspersons of North Karnataka (r=0.0022, p=0.9700) at a 5 percent significance level. Hence, the H_0 is accepted, and H_1 isrejected. It means that the physical fitness variable, i.e., Pull-ups (N),and the dimension of socioeconomic status, i.e.,professional scores of North Karnataka sports persons, are independent. In other words, the increases (decreases) in the dimension of socioeconomic status, i.e.,professional scores of sportspersons of North Karnataka, is as not supporting an increase (decrease) in their physical fitness variable, i.e., Pull-ups (N) scores.
- No significant and positive correlation was observed between the physical fitness variable, i.e., Pull-ups (N),and the dimension of socioeconomic status, i.e.,monthly income scores of sportspersons of North Karnataka (r=0.1042, p=0.0715) at 5 percent significance level. Hence, the H_0 is accepted, and H_1 isrejected. It means that the physical fitness variable, i.e., Pull-ups (N),and the dimension of socioeconomic status, i.e.,monthly income scores of North Karnataka sports persons, are independent. In other words, the not significant increases (decreases) in the dimension of socioeconomic status, i.e.,monthly income scores of sportspersons of North Karnatakais as not supporting an increase (decrease) in their physical fitness variable, i.e., Pull-ups (N) scores.
- A significant and positive correlation was observed between the physical fitness variable, i.e., Pull-ups (N),and the dimension of socioeconomic status, i.e.,total wealth in cash or debts scores of sportspersons of North Karnataka (r=0.4484, p=0.0001) at 5 percent significance level. It

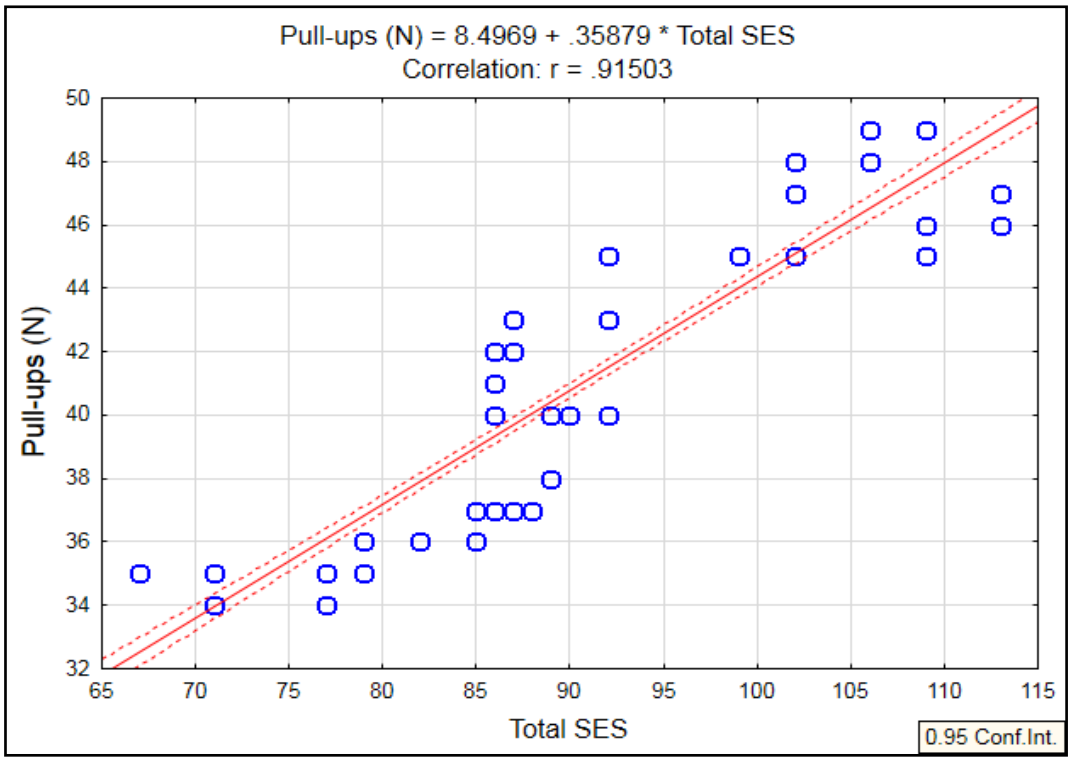
means that the physical fitness variable, i.e., Pull-ups (N), and the dimension of socioeconomic status, i.e., total wealth in cash or debt scores of sportspersons of North Karnataka, are dependent on each other. In other words, the increases (decreases) in the dimension of socioeconomic status, i.e., total wealth in cash or debt scores of sportspersons of North Karnatakais as, supporting an increase (decrease) in their physical fitness variable, i.e., Pull-ups (N) scores. Hence, the H0 is rejected, and H1 is accepted.

- A significant and positive correlation was observed between the physical fitness variable, i.e., Pull-ups (N),and the dimension of socioeconomic status, i.e.,property scores of sportspersons of North Karnataka (r=0.6934, p=0.0001) at a 5 percent significance level. It means that the physical fitness variable, i.e., Pull-ups (N) and socio-economic status scores of sportspersons of North Karnataka, are dependent on each other. In other words, the increases (decreases) in the dimension of socioeconomic status, i.e., property scores of sportspersons of North Karnataka, is as supported by an increase (decrease) in their physical fitness variable, i.e., Pull-ups (N) scores. Hence, the H0 is rejected, and H1 is accepted.
- A significant and positive correlation was observed between the physical fitness variable, i.e., Pull-ups (N),and the dimension of socioeconomic status, i.e.,surrounding locality scores of sportspersons of North Karnataka (r=0.3549, p=0.0001) at 5 percent significance level. It means that the physical fitness variable, i.e., Pull-ups (N), and the dimension of socioeconomic status, i.e., surrounding locality scores of sportspersons of North Karnataka, are dependent on each other. In other words, the increases (decreases) in the dimension of socioeconomic status, i.e., surrounding locality scores of sportspersons of North Karnataka, is as supported by an increase (decrease) in their physical fitness variable, i.e., Pull-ups (N) scores. Hence, the H0 is rejected, and H1 is accepted.
- A significant and positive correlation was observed between the physical fitness variable, i.e., Pull-ups (N),and the dimension of socioeconomic status, i.e.,social status scores of sportspersons of North Karnataka (r=0.3679, p=0.0001) at a 5 percent significance level. It means that the physical fitness variable, i.e., Pull-ups (N), and the dimension of socioeconomic status, i.e., social status scores of sportspersons of North Karnataka, are dependent on each other. In other words, the increases (decreases) in the dimension of socioeconomic status, i.e., social status scores of sportspersons of North Karnataka, is as supporting an increase (decrease) in their physical fitness variable, i.e., Pull-ups (N) scores. Hence, the H0 is rejected, and H1 is accepted.

Therefore, the following linear regression or prediction equation of physical fitness variable, i.e., Pull-ups (N) by socio-economic status of sportspersons of North Karnataka, is formulated and given by Physical fitness variable, i.e., Pull-ups (N) (Y)=8.4969 +0.3587*SES

Further, the relationship between the physical fitness variable, i.e., Pull-ups (N), with the socio-economic status scoreof sportspersons of North Karnataka is also presented in the following diagram.

Figure:nu 9 Scatter diagram showing the correlation coefficient between physical fitness variable, i.e., Pull-ups (N) with socio-economic status scoresof sportspersons of North Karnataka



Null hypothesis (H_0): No significant relationship between the physical fitness variable, i.e., Shuttle run (in a sec) with socio-economic status and its dimensions scores (i.e.education, profession, monthly income, total wealth in cash or debts, property, surrounding locality and social status) of sportspersons of North Karnataka

Alternative hypothesis (H_1): A significant relationship between physical fitness variable, i.e., Shuttle run (in a sec) with socio-economic status and its dimensions scores (i.e.education, profession, monthly income, total wealth in cash or debts, property, surrounding locality and social status) of sportspersons of North Karnataka

To test H_0, Karl Pearson's correlation coefficient method was utilized,and the results are displayed in the table below.

Table:nu 10.1 Karl Pearson's correlation coefficient between physical fitness variable, i.e., Shuttle run (in a sec) with socio-economic status and its dimensions scores

Variables	The correlation coefficient between physical fitness variable, i.e., Shuttle run (in a sec) with			
	Correlation coefficient (r)	Degrees of freedom	t-value	p-value
Total SES	0.6026	298	13.0357	0.0001,S
Education	0.5040	298	10.0725	0.0001,S
Profession	0.0243	298	0.4197	0.6750,NS
Monthly income	0.0773	298	1.3387	0.1817,NS
Total wealth in cash or debts	0.3834	298	7.1664	0.0001,S
Property	0.3773	298	7.0320	0.0001,S
Surrounding locality	0.1231	298	2.1419	0.0330,S
Social status	0.0739	298	1.2800	0.2015,NS

The results of the above table clearly show the followings:

- A significant and positive correlation was observed between the physical fitness variable, i.e., Shuttle run (in a sec),and socioeconomic status scores of sportspersons of North Karnataka (r=0.6026, p=0.0001) at a 5 percent significance level. It means that the physical fitness variable, i.e., Shuttle run (in a sec) and socio-economic status scores of sportspersons of North Karnataka, are dependent on each other. In other words, the increases (decreases) in socio-economic status scores of sportspersons of North Karnatakais as supported by an increase (decrease) in their physical fitness variable, i.e., Shuttle run (in sec) scores. Hence, the H0 is rejected, and H1 is accepted.
- A significant and positive correlation was observed between the physical fitness variable, i.e., Shuttle run (in a sec),and the dimension of socioeconomic status, i.e.,education scores of sportspersons of North Karnataka (r=0.5040, p=0.0001) at 5 percent significance level. It means that the physical fitness variable, i.e., Shuttle run (in a sec), and dimension of socioeconomic status, i.e., education scores of sportspersons of North Karnataka, are dependent on each other. In

other words, the increases (decreases) in the dimension of socioeconomic status, i.e., education scores of sportspersons of North Karnataka,are as supporting an increase (decrease) in their physical fitness variable, i.e., Shuttle run (in sec) scores. Hence, the H0 is rejected, and H1 is accepted.

- No significant and positive correlation was observed between the physical fitness variable, i.e., Shuttle run (in a sec),and the dimension of socioeconomic status, i.e.,professional scores of sportspersons of North Karnataka (r=0.0243, p=0.6750) at 5 percent significance level. Hence, the H_0 is accepted, and H_1 isrejected. It means that the physical fitness variable, i.e., Shuttle run (in a sec), and dimension of socioeconomic status, i.e., professional scores of sportspersons of North Karnataka, are independent. In other words, the increases (decreases) in the dimension of socioeconomic status, i.e.,professional scores of sportspersons of North Karnataka, is as not supporting an increase (decrease) in their physical fitness variable, i.e., Shuttle run (in sec) scores.
- No significant and positive correlation was observed between the physical fitness variable, i.e., Shuttle run (in a sec),and the dimension of socioeconomic status, i.e.,monthly income scores of sportspersons of North Karnataka (r=0.0773, p=0.1817) at 5 percent significance level. It means that the physical fitness variable, i.e., Shuttle run (in a sec), and the dimension of socioeconomic status, i.e., monthly income scores of North Karnataka sportspersons, are independent. In other words, the not significant increases (decreases) in the dimension of socioeconomic status, i.e., monthly income scores of sportspersons of North Karnatakais as not supporting to increase (decrease) in their physical fitness variable, i.e., Shuttle run (in sec) scores. Hence, the H0 is accepted, and H1 is rejected.
- A significant and positive correlation was observed between the physical fitness variable, i.e., Shuttle run (in a sec),and the dimension of socioeconomic status, i.e.,total wealth in cash or debts scores of sportspersons of North Karnataka (r=0.3834, p=0.0001) at 5 percent significance level. It means that the physical fitness variable, i.e., Shuttle run (in a sec), and dimension of socioeconomic status, i.e., total wealth in cash or debt scores of sportspersons of North Karnataka, are dependent on each other. In other words, the increases (decreases) in the dimension of socioeconomic status, i.e., total wealth in cash or debt scores of sportspersons of North Karnataka, support to increase (decrease) in their physical fitness variable, i.e., total wealth in cash or debt scores. Hence, the H0 is rejected, and H1 is accepted.
- A significant and positive correlation was observed between the physical fitness variable, i.e., Shuttle run (in a sec),and the dimension of socioeconomic status, i.e.,property scores of sportspersons of North Karnataka (r=0.3773, p=0.0001) at 5 percent significance level. It means that the physical fitness variable, i.e., Shuttle run (in a sec) and socio-economic status scores of sportspersons of North Karnataka, are dependent on each other. In other words, the increases (decreases) in the dimension of socioeconomic status, i.e., property scores of sportspersons of

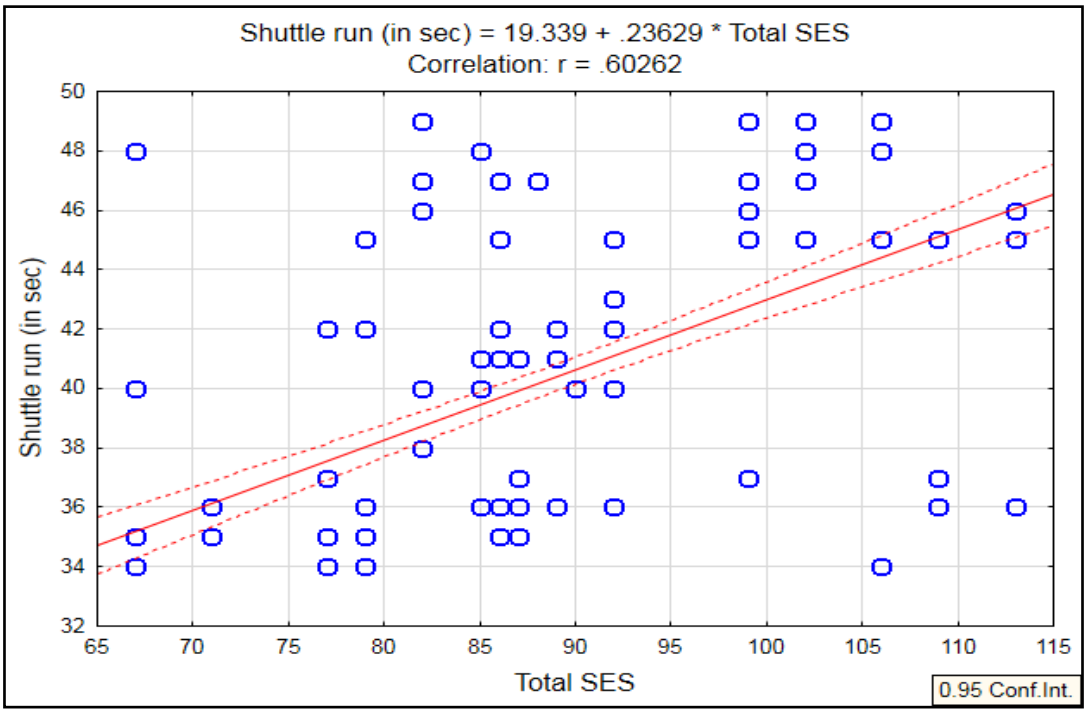
North Karnataka, is as supporting to increase (decrease) in their physical fitness variable, i.e., Shuttle run (in sec) scores. Hence, the H0 is rejected, and H1 is accepted.

- A significant and positive correlation was observed between the physical fitness variable, i.e., Shuttle run (in a sec),and the dimension of socioeconomic status, i.e.,surrounding locality scores of sportspersons of North Karnataka (r=0.1231, p=0.0330) at 5 percent significance level. It means that the physical fitness variable, i.e., Shuttle run (in a sec), and the dimension of socioeconomic status, i.e., surrounding locality scores of sportspersons of North Karnataka, are dependent on each other. In other words, the increases (decreases) in the dimension of socioeconomic status, i.e., surrounding locality scores of sportspersons of North Karnataka, is as supporting to increase (decrease) in their physical fitness variable, i.e., Shuttle run (in sec) scores. Hence, the H0 is rejected, and H1 is accepted.
- No significant and positive correlation was observed between the physical fitness variable, i.e., Shuttle run (in a sec),and the dimension of socioeconomic status, i.e.,social status scores of sportspersons of North Karnataka (r=0.0739, p=0.2015) at 5 percent significance level. It means that the physical fitness variable, i.e., Shuttle run (in a sec), and the dimension of socioeconomic status, i.e., social status scores of North Karnataka sports persons, are independent. In other words, the increases (decreases) in the dimension of socioeconomic status, i.e., social status scores of sportspersons of North Karnataka, is as not supporting to increase (decrease) in their physical fitness variable, i.e., Shuttle run (in sec) scores. Hence, the H0 is accepted, and H1 is rejected.

Therefore, the following linear regression or prediction equation of physical fitness variable, i.e., Shuttle run (in a sec) by socio-economic status of sportspersons of North Karnataka, is formulated and given by Physical fitness variable, i.e., Shuttle run (in a sec) (Y)=19.339+0.2362*SES

Further, the following diagram presents the relationship between the physical fitness variable, i.e., Shuttle run (in a sec), and North Karnataka sportspersons' socio-economic status score.

Figure:10 Scatter diagram showing the correlation coefficient between physical fitness variable, i.e., Shuttle run (in a sec) with socio-economic status scoresof sportspersons of North Karnataka



Null hypothesis (H_0): No significant relationship between the physical fitness variable, i.e., Standing broad jump (meters) with socio-economic status and its dimensions scores (i.e.education, profession, monthly income, total wealth in cash or debts, property, surrounding locality and social status) of sportspersons of North Karnataka

Alternative hypothesis (H_1): A significant relationship between physical fitness variable, i.e., Standing broad jump (meters) with socio-economic status and its dimensions scores (i.e.education, profession, monthly income, total wealth in cash or debts, property, surrounding locality, and social class) of sportspersons of North Karnataka

To test H_0, Karl Pearson's correlation coefficient method was utilized,and the results are displayed in the table below.

Table: nu 11.1 Karl Pearson's correlation coefficient between physical fitness variable, i.e., Standing broad jump (meters) with socio-economic status and its dimensions scores

Variables	The correlation coefficient between physical fitness variable, i.e., standing broad jump (meters)			
	Correlation coefficient (r)	Degrees of freedom	t-value	p-value
Total SES	0.8224	298	24.9553	0.0001,S
Education	0.4820	298	9.4966	0.0001,S
Profession	0.0861	298	1.4926	0.1366,NS
Monthly income	-0.1010	298	-1.7518	0.0808,NS
Total wealth in cash or debts	0.3653	298	6.7753	0.0001,S
Property	0.5685	298	11.9300	0.0001,S
Surrounding locality	0.4640	298	9.0423	0.0001,S
Social status	0.2525	298	4.5047	0.0001,S

The results of the above table clearly show the followings:

- A significant and positive correlation was observed between the physical fitness variable, i.e., Standing broad jump (meters),and socioeconomic status scores of sportspersons of North Karnataka (r=0.8224, p=0.0001) at a 5 percent significance level. It means that the physical fitness variable, i.e., Standing broad jump (meters) and socio-economic status scores of sportspersons of North Karnataka, are dependent on each other. In other words, the increases (decreases) in socio-economic status scores of sportspersons of North Karnataka are as supporting to increase (decrease) in their physical fitness variable, i.e., Standing broad jump (meters) scores. Hence, the H0 is rejected, and H1 is accepted.
- A significant and positive correlation was observed between the physical fitness variable, i.e., Standing broad jump (meters),and the dimension of socioeconomic status, i.e.,education scores of sportspersons of North Karnataka (r=0.4820, p=0.0001) at 5 percent significance level. It means that the physical fitness variable, i.e., Standing broad jump (meters), and the dimension of socioeconomic status, i.e., education scores of sportspersons of North Karnataka, are dependent

on each other. In other words, the increases (decreases) in the dimension of socioeconomic status, i.e., education scores of sportspersons of North Karnataka, is as supportedby an increase (decrease) in their physical fitness variable, i.e., Standing broad jump (meters) scores. Hence, the H0 is rejected, and H1 is accepted.

- No significant and positive correlation was observed between the physical fitness variable, i.e., Standing broad jump (meters),and the dimension of socioeconomic status, i.e.,professional scores of sportspersons of North Karnataka (r=0.0861, p=0.1366) at a 5 percent significance level. Hence, the H_0 is accepted, and H_1 isrejected. It means that the physical fitness variable, i.e., Standing broad jump (meters),and the dimension of socioeconomic status, i.e.,professional scores of sportspersons of North Karnataka, are independent. In other words, the increases (decreases) in the dimension of socioeconomic status, i.e.,professional scores of sportspersons of North Karnataka, is as not supporting an increase (decrease) in their physical fitness variable, i.e., Standing broad jump (meters) scores.
- No significant and negative correlation was observed between the physical fitness variable, i.e., Standing broad jump (meters),and the dimension of socioeconomic status, i.e.,monthly income scores of sportspersons of North Karnataka (r=-0.1010, p=0.0862) at 5 percent significance level. Hence, the H_0 is accepted, and H_1 isrejected. It means that the physical fitness variable, i.e., Standing broad jump (meters),and the dimension of socioeconomic status, i.e.,monthly income scores of North Karnataka sportspersons, are independent. In other words, the not significant increases (decreases) in the dimension of socioeconomic status, i.e.,monthly income scores of sportspersons of North Karnatakais as not supporting to increase (decrease) in their physical fitness variable, i.e., Standing broad jump (meters) scores.
- A significant and positive correlation was observed between the physical fitness variable, i.e., Standing broad jump (meters),and the dimension of socioeconomic status, i.e.,total wealth in cash or debts scores of sportspersons of North Karnataka (r=0.3653, p=0.0001) at 5 percent significance level. It means that the physical fitness variable, i.e., Standing broad jump (meters), and the dimension of socioeconomic status, i.e., total wealth in cash or debt scores of sportspersons of North Karnataka, are dependent on each other. In other words, the increases (decreases) in the dimension of socioeconomic status, i.e., total wealth in cash or debt scores of sportspersons of North Karnataka, supporting to increase (decrease) in their physical fitness variable, i.e., Standing broad jump (meters), scores. Hence, the H0 is rejected, and H1 is accepted.
- A significant and positive correlation was observed between the physical fitness variable, i.e., Standing broad jump (meters),and the dimension of socioeconomic status, i.e.,property scores of sportspersons of North Karnataka (r=0.5685, p=0.0001) at 5 percent significance level. It means that the physical fitness variable, i.e., Standing broad jump (meters) and socio-economic status scores of sportspersons of North Karnataka, are dependent on each other. In other words, the

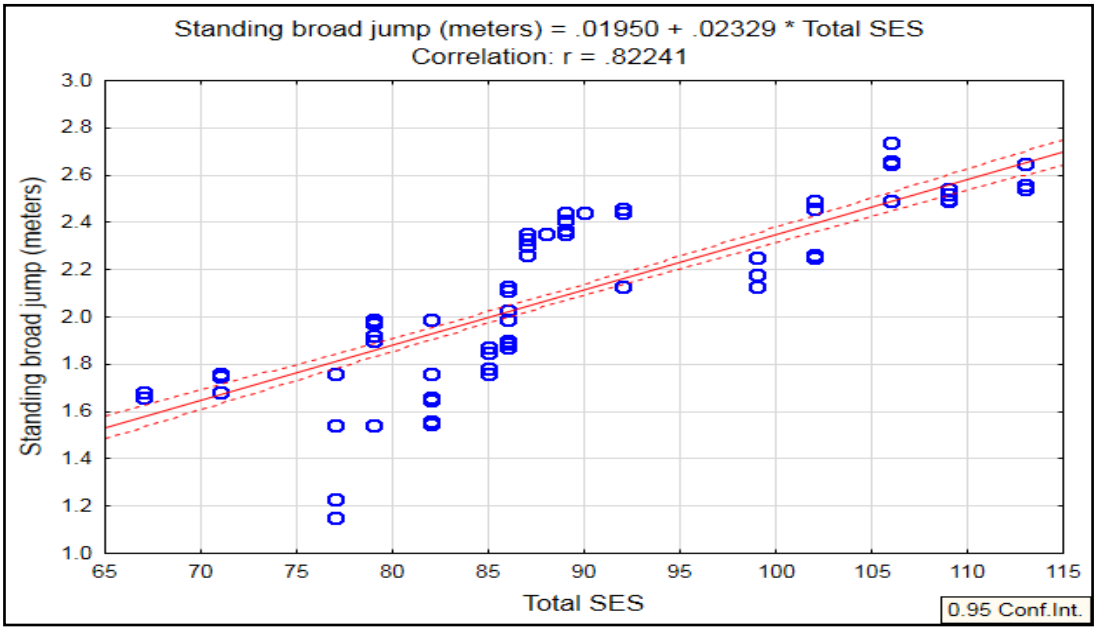
increases (decreases) in the dimension of socioeconomic status, i.e., property scores of sportspersons of North Karnataka, is as supporting to increase (decrease) in their physical fitness variable, i.e., Standing broad jump (meters) scores. Hence, the H0 is rejected, and H1 is accepted.

- A significant and positive correlation was observed between the physical fitness variable, i.e., Standing broad jump (meters),and the dimension of socioeconomic status, i.e.,surrounding locality scores of sportspersons of North Karnataka (r=0.4640, p=0.0001) at 5 percent significance level. It means that the physical fitness variable, i.e., Standing broad jump (meters), and the dimension of socioeconomic status, i.e., surrounding locality scores of sportspersons of North Karnataka, are dependent on each other. In other words, the increases (decreases) in the dimension of socioeconomic status, i.e., surrounding locality scores of sportspersons of North Karnataka, are as supporting to increase (decrease) in their physical fitness variable, i.e., Standing broad jump (meters) scores. Hence, the H0 is rejected, and H1 is accepted.
- A significant and positive correlation was observed between the physical fitness variable, i.e., Standing broad jump (meters),and the dimension of socioeconomic status, i.e.,social status scores of sportspersons of North Karnataka (r=0.2525, p=0.0004) at 5 percent significance level. It means that the physical fitness variable, i.e., Standing broad jump (meters), and the dimension of socioeconomic status, i.e., social status scores of sportspersons of North Karnataka, are dependent on each other. In other words, the increases (decreases) in the dimension of socioeconomic status, i.e., social status scores of sportspersons of North Karnataka, is as supporting to increase (decrease) in their physical fitness variable, i.e., Standing broad jump (meters) scores. Hence, the H0 is rejected, and H1 is accepted.

Therefore, the following linear regression or prediction equation of physical fitness variable, i.e., Standing broad jump (meters) by socio-economic status of sportspersons of North Karnataka, is formulated and given by Physical fitness variable, i.e., Standing broad jump (meters) (Y)=0.0195+0.02329*SES

Further, the relationship between the physical fitness variable, i.e., Standing broad jump (meters), with socio-economic status score sports persons of North Karnataka is also presented in the following diagram.

Figure:11 Scatter diagram showing the correlation coefficient between physical fitness variable, i.e., Standing broad jump (meters) with socio-economic status scoresof sportspersons of North Karnataka



Null hypothesis (H_0): No significant relationship between the physical fitness variable, i.e., Bent-knee-sit up (numbers) with socio-economic status and its dimensions scores (i.e.education, profession, monthly income, total wealth in cash or debts, property, surrounding locality and social status) of sportspersons of North Karnataka

Alternative hypothesis (H_1): A significant relationship between physical fitness variable, i.e., Bent-knee-sit up (sit up) with socioeconomic status and its dimensions scores (i.e.education, profession, monthly income, total wealth in cash or debts, property, surrounding locality and social status) of sportspersons of North Karnataka

To test H_0, Karl Pearson's correlation coefficient method was utilized,and the results are displayed in the table below.

Table:nu 12.1 Karl Pearson's correlation coefficient between physical fitness variable, i.e., Bent-knee-sit up (numbers) with socio-economic status and its dimensions scores

Variables	The correlation coefficient between physical fitness variables, i.e., Bent-knee-sit up (numbers)			
	Correlation coefficient (r)	Degrees of freedom	t-value	p-value
Total SES	0.6937	298	16.6242	0.0001,S
Education	0.4903	298	9.7113	0.0001,S
Profession	0.1211	298	2.1053	0.0361,S
Monthly income	0.0265	298	0.4570	0.6480,NS
Total wealth in cash or debts	0.4206	298	8.0028	0.0001,S
Property	0.5655	298	11.8364	0.0001,S
Surrounding locality	0.1940	298	3.4133	0.0007,S
Social status	0.0302	298	0.5223	0.6019,NS

The results of the above table clearly show the followings:

- A significant and positive correlation was observed between the physical fitness variable, i.e., Bent-knee-sit up (numbers),and socioeconomic status scores of sportspersons of North Karnataka (r=0.6937, p=0.0001) at a 5 percent significance level. It means that the physical fitness variable, i.e., Bent-knee-sit up (numbers) and socio-economic status scores of sportspersons of North Karnataka, are dependent on each other. In other words, the increases (decreases) in socio-economic status scores of sportspersons of North Karnataka are as supporting to increase (decrease) in their physical fitness variable, i.e., Bent-knee-sit up (numbers) scores. Hence, the H0 is rejected, and H1 is accepted.
- A significant and positive correlation was observed between the physical fitness variable, i.e., Bent-knee-sit up (numbers),and the dimension of socioeconomic status, i.e.,education scores of sportspersons of North Karnataka (r=0.4903, p=0.0001) at 5 percent significance level. It means that the physical fitness variable, i.e., Bent-knee-sit up (numbers), and the dimension of socioeconomic status, i.e., education scores of sportspersons of North Karnataka, depend on each

other. In other words, the increases (decreases) in the dimension of socioeconomic status, i.e., education scores of sportspersons of North Karnataka, is as supporting in an increase (decrease) to their physical fitness variable, i.e., Bent-knee-sit up (numbers) scores. Hence, the H0 is rejected, and H1 is accepted.

- A significant and positive correlation was observed between the physical fitness variable, i.e., Bent-knee-sit up (numbers),and the dimension of socioeconomic status, i.e.,professional scores of sportspersons of North Karnataka (r=0.1211, p=0.0361) at 5 percent significance level. It means that the physical fitness variable, i.e., Bent-knee-sit up (numbers), and the dimension of socioeconomic status, i.e., professional scores of sportspersons of North Karnataka, depend on each other. In other words, the increases (decreases) in the dimension of socioeconomic status, i.e., professional scores of sportspersons of North Karnataka, is as supporting in an increase (decrease) in their physical fitness variable, i.e., Bent-knee-sit up (numbers) scores. Hence, the H0 is rejected, and H1 is accepted.
- No significant and positive correlation was observed between the physical fitness variable, i.e., Bent-knee-sit up (numbers),and the dimension of socioeconomic status, i.e.,monthly income scores of sportspersons of North Karnataka (r=0.0265, p=0.6480) at 5 percent significance level. It means that the physical fitness variable, i.e., Bent-knee-sit up (sit up), and the dimension of socioeconomic status, i.e., monthly income scores of sportspersons of North Karnataka, are independent. In other words, the not significant increases (decreases) in the dimension of socioeconomic status, i.e., monthly income scores of sportspersons of North Karnatakais, as not supporting to increase (decrease) in their physical fitness variable, i.e., Bent-knee-sit up (numbers) scores. Hence, the H0 is accepted, and H1 is rejected.
- A significant and positive correlation was observed between the physical fitness variable, i.e., Bent-knee-sit up (numbers),and the dimension of socioeconomic status, i.e.,total wealth in cash or debts scores of sportspersons of North Karnataka (r=0.4206, p=0.0001) at 5 percent significance level. It means that the physical fitness variable, i.e., Bent-knee-sit up (numbers), and the dimension of socioeconomic status, i.e., total wealth in cash or debt scores of sportspersons of North Karnataka, are dependent on each other. In other words, the increases (decreases) in the dimension of socioeconomic status, i.e., total wealth in cash or debts scores of sportspersons of North Karnatakais as supporting to increase (decrease) in their physical fitness variable, i.e., Bent-knee-sit up (numbers) scores. Hence, the H0 is rejected, and H1 is accepted.
- A significant and positive correlation was observed between the physical fitness variable, i.e., Bent-knee-sit up (numbers),and the dimension of socioeconomic status, i.e.,property scores of sportspersons of North Karnataka (r=0.5655, p=0.0001) at 5 percent significance level. It means that the physical fitness variable, i.e., Bent-knee-sit up (numbers) and socio-economic status scores of sportspersons of North Karnataka, are dependent on each other. In other words, the

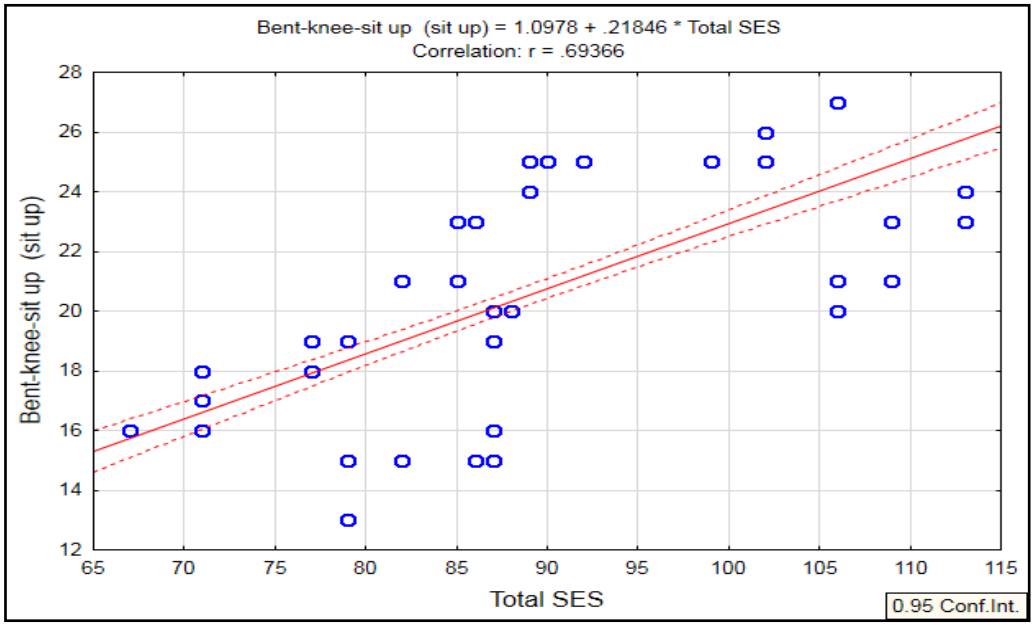
increases (decreases) in the dimension of socioeconomic status, i.e., property scores of sportspersons of North Karnataka, is as supporting to increase (decrease) in their physical fitness variable, i.e., Bent-knee-sit up (numbers) scores. Hence, the H0 is rejected, and H1 is accepted.

- A significant and positive correlation was observed between the physical fitness variable, i.e., Bent-knee-sit up (numbers),and the dimension of socioeconomic status, i.e.,surrounding locality scores of sportspersons of North Karnataka (r=0.1940, p=0.0007) at 5 percent significance level. It means that the physical fitness variable, i.e., Bent-knee-sit up (numbers) and the dimension of socioeconomic status, i.e., surrounding locality scores of sportspersons of North Karnataka, are dependent on each other. In other words, the increases (decreases) in the dimension of socioeconomic status, i.e., surrounding locality scores of sportspersons of North Karnataka,is as supporting to increase (decrease) in their physical fitness variable, i.e., Bent-knee-sit up (numbers) scores. Hence, the H0 is rejected, and H1 is accepted.
- No significant and positive correlation was observed between the physical fitness variable, i.e., Bent-knee-sit up (numbers),and the dimension of socioeconomic status, i.e.,social status scores of sportspersons of North Karnataka (r=0.0302, p=0.6019) at 5 percent significance level. It means that the physical fitness variable, i.e., Bent-knee-sit up (numbers), and the dimension of socioeconomic status, i.e., social status scores of sportspersons of North Karnataka, are independent. In other words, the increases (decreases) in the dimension of socioeconomic status, i.e., social status scores of sportspersons of North Karnataka, is as not supporting to increase (decrease) in their physical fitness variable, i.e., Bent-knee-sit up (numbers) scores. Hence, the H0 is accepted, and H1 is rejected.

Therefore, the following linear regression or prediction equation of physical fitness variable, i.e., Bent-knee-sit up (numbers) by socio-economic status of sportspersons of North Karnataka, is formulated and given by Physical fitness variable, i.e., Bent-knee-sit up (numbers) (Y)=1.0978+0.22184*SES

Further, the following diagram presents the relationship between the physical fitness variable, i.e., Bent-knee-sit up (numbers), with North Karnataka sportspersons' socio-economic status score.

Figure:12 Scatter diagram showing the correlation coefficient between physical fitness variable, i.e., Bent-knee-sit up (numbers) with socio-economic status scoresof sportspersons of North Karnataka



Null hypothesis (H_0): No significant relationship between the physical fitness variable, i.e., 50-yard dash (sec) with socio-economic status and its dimensions scores (i.e.education, profession, monthly income, total wealth in cash or debts, property, surrounding locality and social status) of sportspersons of North Karnataka

Alternative hypothesis (H_1): A significant relationship between the physical fitness variable, i.e., 50-yard dash (sec) with socio-economic status and its dimensions scores (i.e.education, profession, monthly income, total wealth in cash or debts, property, surrounding locality and social status) of sportspersons of North Karnataka

To test H_0, Karl Pearson's correlation coefficient method was utilized, and the results are displayed in the table below.

Table:nu 13.1 Karl Pearson's correlation coefficient between physical fitness variable, i.e., 50-yard dash (sec) with socio-economic status and its dimensions scores

Variables	The correlation coefficient between physical fitness variable, i.e., 50-yard dash (sec) with			
	Correlation coefficient (r)	Degrees of freedom	t-value	p-value
Total SES	0.6588	298	15.1159	0.0001,S
Education	0.3761	298	7.0080	0.0001,S
Profession	-0.2383	298	-4.2356	0.0001,S
Monthly income	-0.0972	298	-1.6864	0.0928,NS
Total wealth in cash or debts	0.3486	298	6.4198	0.0001,S
Property	0.7183	298	17.8235	0.0001,S
Surrounding locality	0.3870	298	7.2463	0.0001,S
Social status	0.4304	298	8.2316	0.0001,S

The results of the above table clearly show the followings:

- A significant and positive correlation was observed between the physical fitness variable, i.e., 50-yard dash (sec),and socioeconomic status scores of sportspersons of North Karnataka (r=0.6588, p=0.0001) at a 5 percent significance level. It means that the physical fitness variable, i.e., 50-yard dash (sec) and socio-economic status scores of sportspersons of North Karnataka, are dependent on each other. In other words, the increases (decreases) in socio-economic status scores of sportspersons of North Karnataka are as supporting to increase (decrease) in their physical fitness variable, i.e., 50-yard dash (sec) scores. Hence, the H0 is rejected, and H1 is accepted.
- A significant and positive correlation was observed between the physical fitness variable, i.e., 50-yard dash (sec),and the dimension of socioeconomic status, i.e.,education scores of sportspersons of North Karnataka (r=0.3761, p=0.0001) at 5 percent significance level. It means that the physical fitness variable, i.e., 50-yard dash (sec), and the dimension of socioeconomic status, i.e., education scores of sportspersons of North Karnataka, are dependent on each other. In other words, the increases (decreases) in the dimension of socioeconomic status, i.e., education scores

of sportspersons of North Karnataka, are as supporting an increase (decrease) to their physical fitness variable, i.e., 50-yard dash (sec) scores. Hence, the H0 is rejected, and H1 is accepted.

- A significant correlation was observed between the physical fitness variable, i.e., 50-yard dash (sec),and the dimension of socioeconomic status, i.e.,profession scores of sportspersons of North Karnataka (r=0.2383, p=0.0001) at a 5 percent significance level. It means that the physical fitness variable, i.e., 50-yard dash (sec), and the dimension of socioeconomic status, i.e., professional scores of sportspersons of North Karnataka, are dependent on each other. In other words, the increases (decreases) in the dimension of socioeconomic status, i.e., professional scores of sportspersons of North Karnataka, is as not supporting an increase (decrease) in their physical fitness variable, i.e., 50-yard dash (sec) scores. Hence, the H0 is rejected, and H1 is accepted.
- No significant correlation was observed between the physical fitness variable, i.e., 50-yard dash (sec),and the dimension of socioeconomic status, i.e.,monthly income scores of sportspersons of North Karnataka (r=-0.0972, p=0.0862) at 5 percent significance level. Hence, the H_0 is accepted, and H_1 isrejected. It means that the physical fitness variable, i.e., 50-yard dash (sec), and the dimension of socioeconomic status, i.e., monthly income scores of sportspersons of North Karnataka, are independent. In other words, the not significant increases (decreases) in the dimension of socioeconomic status, i.e.,monthly income scores of sportspersons of North Karnatakais as not supporting to increase (decrease) in their physical fitness variable, i.e., 50, yard dash (sec) scores.
- A significant and positive correlation was observed between the physical fitness variable, i.e., 50-yard dash (sec),and the dimension of socioeconomic status, i.e.,total wealth in cash or debts scores of sportspersons of North Karnataka (r=0.3486, p=0.0001) at 5 percent significance level. It means that the physical fitness variable, i.e., 50-yard dash (sec), and the dimension of socioeconomic status, i.e., total wealth in cash or debt scores of sportspersons of North Karnataka, are dependent on each other. In other words, the increases (decreases) in the dimension of socioeconomic status, i.e., total wealth in cash or debts scores of sportspersons of North Karnataka, is as supporting to increase (decrease) in their physical fitness variable, i.e., 50-yard dash (sec) scores. Hence, the H0 is rejected, and H1 is accepted.
- A significant and positive correlation was observed between the physical fitness variable, i.e., 50-yard dash (sec),and the dimension of socioeconomic status, i.e.,property scores of sportspersons of North Karnataka (r=0.7183, p=0.0001) at 5 percent significance level. It means that the physical fitness variable, i.e., 50-yard dash (sec) and socio-economic status scores of sportspersons of North Karnataka, are dependent on each other. In other words, the increases (decreases) in the dimension of socioeconomic status, i.e., property scores of sportspersons of

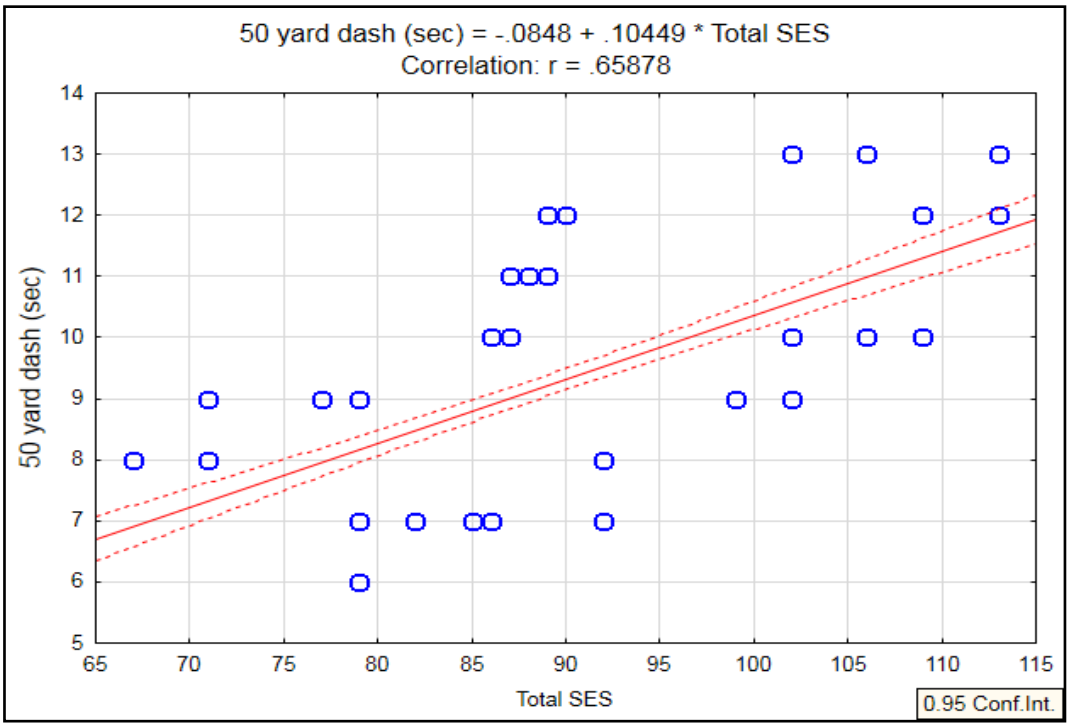
North Karnataka, are as supporting to increase (decrease) in their physical fitness variable, i.e., 50-yard dash (sec) scores. Hence, the H0 is rejected, and H1 is accepted.

- A significant and positive correlation was observed between the physical fitness variable, i.e., 50-yard dash (sec),and the dimension of socioeconomic status, i.e.,surrounding locality scores of sportspersons of North Karnataka (r=0.3870, p=0.0001) at 5 percent significance level. It means that the physical fitness variable, i.e., 50-yard dash (sec), and the dimension of socioeconomic status, i.e., surrounding locality scores of North Karnataka sports persons,depend on each other. In other words, the increases (decreases) in the dimension of socioeconomic status, i.e., surrounding locality scores of sportspersons of North Karnataka, is as supporting to increase (decrease) in their physical fitness variable, i.e., 50-yard dash (sec) scores. Hence, the H0 is rejected, and H1 is accepted.
- A significant and positive correlation was observed between the physical fitness variable, i.e., 50-yard dash (sec),and the dimension of socioeconomic status, i.e.,social status scores of sportspersons of North Karnataka (r=0.4304, p=0.0004) at 5 percent significance level. It means that the physical fitness variable, i.e., 50-yard dash (sec), and the dimension of socioeconomic status, i.e., social status scores of sportspersons of North Karnataka, are dependent on each other. In other words, the increases (decreases) in the dimension of socioeconomic status, i.e., social status scores of sportspersons of North Karnataka, is as supporting to increase (decrease) in their physical fitness variable, i.e., 50-yard dash (sec) scores. Hence, the H0 is rejected, and H1 is accepted.

Therefore, the following linear regression or prediction equation of physical fitness variable, i.e., 50-yard dash (sec) by socio-economic status of sportspersons of North Karnataka, is formulated and given by Physical fitness variable, i.e., 50-yard dash (sec) (Y)=-0.0848+0.10449*SES

Further, the following diagram presents the relationship between physical fitness variables, i.e., 50, yard dash (sec), and socioeconomic status scores of North Karnataka sports persons.

Figure: 13 Scatter diagram showing the correlation coefficient between physical fitness variable, i.e., 50-yard dash (sec), with socio-economic status scoresof sportspersons of North Karnataka



Null hypothesis (H_0): No significant relationship between the physical fitness variable, i.e., 600-yard dash (sec) with socio-economic status and its dimensions scores (i.e.,education, profession, monthly income, total wealth in cash or debts, property, surrounding locality and social status) of sportspersons of North Karnataka

Alternative hypothesis (H_1): A significant relationship between the physical fitness variable, i.e., 600-yard dash (sec)with socio-economic status and its dimensions scores (i.e.,education, profession, monthly income, total wealth in cash or debts, property, surrounding locality and social status) of sportspersons of North Karnataka

To test H_0, Karl Pearson's correlation coefficient technique was executed, and the results are displayed in the table below.

Table:nu 14.1 Karl Pearson's correlation coefficient between physical fitness variable, i.e., 600-yard dash (sec) with socio-economic status and its dimensions scores

Variables	The correlation coefficient between physical fitness variable, i.e., 600-yard dash (sec) with			
	Correlation coefficient (r)	Degrees of freedom	t-value	p-value
Total SES	0.7350	298	18.7111	0.0001,S
Education	0.5935	298	12.7291	0.0001,S
Profession	0.0891	298	1.5444	0.1236,NS
Monthly income	0.0704	298	1.2177	0.2243,NS
Total wealth in cash or debts	0.4722	298	9.2485	0.0001,S
Property	0.3541	298	6.5367	0.0001,S
Surrounding locality	0.1814	298	3.1838	0.0016,S
Social status	0.1190	298	2.0685	0.0395,S

The results of the above table clearly show the followings:

- A significant and positive correlation was observed between the physical fitness variable, i.e., 600-yard dash (sec),and socioeconomic status scores of sportspersons of North Karnataka (r=0.7350, p=0.0001) at a 5 percent significance level. It means that the physical fitness variable, i.e., 600-yard dash (sec) and socio-economic status scores of sportspersons of North Karnataka, are dependent on each other. In other words, the increases (decreases) in socio-economic status scores of sportspersons of North Karnataka are as supporting to increase (decrease) in their physical fitness variable, i.e., 600-yard dash (sec) scores. Hence, the H0 is rejected, and H1 is accepted.
- A significant and positive correlation was observed between the physical fitness variable, i.e., 600-yard dash (sec),and the dimension of socioeconomic status, i.e.,education scores of sportspersons of North Karnataka (r=0.5935, p=0.0001) at 5 percent significance level. It means that the physical fitness variable, i.e., 600-yard dash (sec), and the dimension of socioeconomic status, i.e., education scores of sportspersons of North Karnataka, are dependent on each other. In

other words, the increases (decreases) in the dimension of socioeconomic status, i.e., education scores of sportspersons of North Karnataka, support an increase (decrease) in their physical fitness variable, i.e., 600-yard dash (sec) scores. Hence, the H0 is rejected, and H1 is accepted.

- No significant and positive correlation was observed between the physical fitness variable, i.e., 600-yard dash (sec),and the dimension of socioeconomic status, i.e.,profession scores of sportspersons of North Karnataka (r=0.0891, p=0.1236) at 5 percent significance level. Hence, the H_0 is accepted, and H_1 isrejected. It means that the physical fitness variable, i.e., 600-yard dash (sec),and the dimension of socioeconomic status, i.e.,professional scores of North Karnataka sports persons, are independent. In other words, the increases (decreases) in the dimension of socioeconomic status, i.e.,professional scores of sportspersons of North Karnataka, is as not supporting an increase (decrease) in their physical fitness variable, i.e., 600-yard dash (sec) scores.
- No significant correlation was observed between the physical fitness variable, i.e., 600-yard dash (sec),and the dimension of socioeconomic status, i.e.,monthly income scores of sportspersons of North Karnataka (r=0.0704, p=0.2243) at 5 percent significance level. It means that the physical fitness variable, i.e., 600-yard dash (sec), and the dimension of socioeconomic status, i.e., monthly income scores of North Karnataka sports persons, are independent. In other words, the not significant increases (decreases) in the dimension of socioeconomic status, i.e., monthly income scores of sportspersons of North Karnataka is as not supporting to increase (decrease) in their physical fitness variable, i.e., 600-yard dash (sec) scores. Hence, the H0 is accepted, and H1 is rejected.
- A significant and positive correlation was observed between the physical fitness variable, i.e., 600-yard dash (sec),and the dimension of socioeconomic status, i.e.,total wealth in cash or debts scores of sportspersons of North Karnataka (r=0.4722, p=0.0001) at 5 percent significance level. It means that the physical fitness variable, i.e., 600-yard dash (sec), and the dimension of socioeconomic status, i.e., total wealth in cash or debt scores of sportspersons of North Karnataka, are dependent on each other. In other words, the increases (decreases) in the dimension of socioeconomic status, i.e., total wealth in cash or debts scores of sportspersons of North Karnatakais as supporting to increase (decrease) in their physical fitness variable, i.e., 600-yard dash (sec) scores. Hence, the H0 is rejected, and H1 is accepted.
- A significant and positive correlation was observed between the physical fitness variable, i.e., 600-yard dash (sec),and the dimension of socioeconomic status, i.e.,property scores of sportspersons of North Karnataka (r=0.3541, p=0.0001) at 5 percent significance level. It means that the physical fitness variable, i.e., 600-yard dash (sec) and socio-economic status scores of sportspersons of North Karnataka, are dependent on each other. In other words, the increases (decreases) in the dimension of socioeconomic status, i.e., property scores of sportspersons of

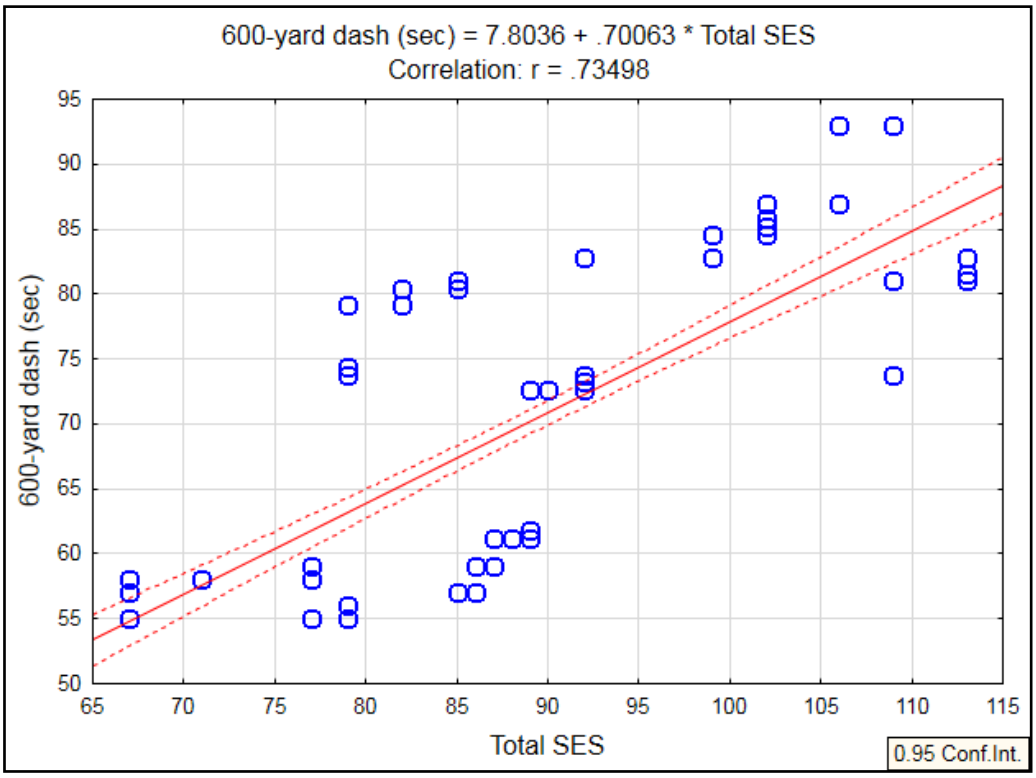
North Karnataka, is as supporting to increase (decrease) in their physical fitness variable, i.e., 600-yard dash (sec) scores. Hence, the H0 is rejected, and H1 is accepted.

- A significant and positive correlation was observed between the physical fitness variable, i.e., 600-yard dash (sec),and the dimension of socioeconomic status, i.e.,surrounding locality scores of sportspersons of North Karnataka (r=0.1814, p=0.0001) at 5 percent significance level. It means that the physical fitness variable, i.e., 600-yard dash (sec), and the dimension of socioeconomic status, i.e., surrounding locality scores of sportspersons of North Karnataka, are dependent on each other. In other words, the increases (decreases) in the dimension of socioeconomic status, i.e., surrounding locality scores of sportspersons of North Karnataka, is as supporting to increase (decrease) in their physical fitness variable, i.e., 600-yard dash (sec) scores. Hence, the H0 is rejected, and H1 is accepted.
- A significant and positive correlation was observed between the physical fitness variable, i.e., 600-yard dash (sec),and the dimension of socioeconomic status, i.e.,social status scores of sportspersons of North Karnataka (r=0.1190, p=0.0395) at 5 percent significance level. It means that the physical fitness variable, i.e., 600-yard dash (sec), and the dimension of socioeconomic status, i.e., social status scores of sportspersons of North Karnataka, are dependent on each other. In other words, the increases (decreases) in the dimension of socioeconomic status, i.e., social status scores of sportspersons of North Karnataka, is as supporting to increase (decrease) in their physical fitness variable, i.e., 600-yard dash (sec) scores. Hence, the H0 is rejected, and H1 is accepted.

Therefore, the following linear regression or prediction equation of physical fitness variable, i.e., 600-yard dash (sec) by socio-economic status of sportspersons of North Karnataka, is formulated and given by Physical fitness variable, i.e., 600-yard dash (sec) (Y) = 7.8036+0.7006*SES

Further, the following diagram presents the relationship between the physical fitness variable, i.e., 600-yard dash (sec),and with socio-economic status scores of North Karnataka sports persons.

Figure: 14 Scatter diagram showing the correlation coefficient between physical fitness variable, i.e., 600-yard dash (sec), with socio-economic status scoresof sportspersons of North Karnataka



Null hypothesis (H_0): No significant relationship between mental toughness and physical fitness variables (i.e., pull-up, shuttle run (in sec), standing broad jump (meters), bent-knee-sit up (sit up), 50-yard dash (sec) and 600-yard dash (sec)) from sports persons of North Karnataka

Alternative hypothesis (H_1): A significant relationship between mental toughness and physical fitness variables (i.e., pull-up, shuttle run (in sec), standing broad jump (meters), bent-knee-sit up (sit up), 50-yard dash (sec) and 600-yard dash (sec)) from sports persons of North Karnataka

To test H_0, Karl Pearson's correlation coefficient method was executed, and the results are displayed in the table below.

Table:15.1 Karl Pearson's correlation coefficient between mental toughness and physical fitness variables

Variables	The correlation coefficient betweenthe mental toughness variable, i.e., 600-yard dash (sec) with			
	Correlation coefficient (r)	Degrees of freedom	t-value	p-value
Pull-ups (N)	0.7225	298	18.0385	0.0001*
Shuttle run (in a sec)	0.5882	298	12.5571	0.0001*
Standing broad jump (meters)	0.6112	298	13.3305	0.0001*
Bent-knee-sit-up (numbers)	0.6098	298	13.2815	0.0001*
50-yard dash (sec)	0.4890	298	9.6777	0.0001*
600-yard dash (sec)	0.7167	298	17.7408	0.0001*

The results of the above table clearly show the followings:

- A significant and positive correlation was observed between mental toughnessand physical fitness variable, i.e.,Pull-ups (N) scores of sportspersons of North Karnataka (r=0.7225, p=0.0001) at a 5 percent significance level. It means that the mental toughness and physical fitness variable, i.e., Pull-up (N) scores of sportspersons of North Karnataka, are dependent on each other. In other words, the increases (decreases) in mental toughness scores of sportspersons of North Karnataka are as supporting to increase (decrease) in their physical fitness variable, i.e., Pull-ups (N)scores. Hence, the H0 is rejected, and H1 is accepted.
- A significant and positive correlation was observed between mental toughnessand physical fitness variable, i.e.,Shuttle run (in a sec) scores of sportspersons of North Karnataka (r=0.5882, p=0.0001) at a 5 percent significance level. It means that the mental toughness and physical fitness variable, i.e., Shuttle run (in a sec) scores of sportspersons of North Karnataka, are dependent on each other. In other words, the increases (decreases) in mental toughness scores of sportspersons of North Karnataka are as supporting to increase (decrease) in their physical fitness variable, i.e., Shuttle run (in sec) scores. Hence, the H0 is rejected, and H1 is accepted.

- A significant and positive correlation was observed between mental toughnessand physical fitness variable, i.e.,Standing broad jump (meters) scores of sportspersons of North Karnataka (r=0.6112, p=0.0001) at a 5 percent significance level. It means that the mental toughness and physical fitness variable, i.e., Standing broad jump (meters) scores of sportspersons of North Karnataka, are dependent on each other. In other words, the increases (decreases) in mental toughness scores of sportspersons of North Karnataka are as supporting to increase (decrease) in their Standing broad jump (meters)scores. Hence, the H0 is rejected, and H1 is accepted.
- A significant and positive correlation was observed between mental toughnessand physical fitness, i.e.,Bent-knee-sit up (numbers) scores of sportspersons of North Karnataka (r=0.6098, p=0.0001) at a 5 percent significance level. It means that the mental toughness and physical fitness variable, i.e., Bent-knee-sit up (numbers) scores of sportspersons of North Karnataka, are dependent on each other. In other words, the increases (decreases) in mental toughness scores of sportspersons of North Karnataka are as supporting to increase (decrease) in their Bent-knee-sit up (numbers) scores. Hence, the H0 is rejected, and H1 is accepted.
- A significant and positive correlation was observed between mental toughnessand physical fitness, i.e.,50-yard dash (sec) scores of sportspersons of North Karnataka (r=0.4890, p=0.0001) at a 5 percent significance level. It means that the mental toughness and physical fitness variable, i.e., 50-yard dash (sec) scores of sportspersons of North Karnataka, are dependent on each other. In other words, the increases (decreases) in mental toughness scores of sportspersons of North Karnataka are as supporting to increase (decrease) in their 50-yard dash (sec)scores. Hence, the H0 is rejected, and H1 is accepted.
- A significant and positive correlation was observed between mental toughnessand physical fitness, i.e.,600-yard dash (sec) scores of sportspersons of North Karnataka (r=0.7167, p=0.0001) at a 5 percent significance level. Hence, the H_0 is rejected, and H_1 is accepted. It means that the mental toughnessand physical fitness variable, i.e.,600-yard dash (sec) scores of sportspersons of North Karnataka, are dependent on each other. In other words, the increases (decreases) in mental toughnessscores of sportspersons of North Karnatakaare as supporting to increase (decrease) in their 600-yard dash (sec)scores

CHAPTER-V

Summary. Conclusions and Recommendation

The data collected for the present investigation have been analyzed and findings presented in the preceding chapters. This chapter presents a brief summary of the investigation, the findings, discussions of the findings, conclusions that have been drawn from the findings, limitations of the study, and implications and suggestions for further research in the field.

Findings

- A significant difference was observed between three levels of socio-economic status (High, Above average and Average) with mental toughness scores of sports persons of North Karnataka
- The sports persons of North Karnataka belongs to High SES and above average SES level differs significantly with mean mental toughness scores
- The sports persons of North Karnataka belong to High SES and average SES level differs significantly with mean mental toughness scores
- The sports persons of North Karnataka belong to Above average SES and average SES level differs significantly with mean mental toughness scores
- No significant difference was observed between three levels of socio-economic status (High, Above average and Average) with first physical fitness variable i.e. Pull-up scores of sports persons of North Karnataka
- The sports persons of North Karnataka belongs to High SES and above average SES level do not differs significantly with mean first physical fitness variable i.e. Pull-up scores
- The sports persons of North Karnataka belongs to Above average SES and average SES level do not differs significantly with mean first physical fitness variable i.e. Pull-up scores
- The sports persons of North Karnataka belongs to High SES and average SES level do not differs significantly with mean first physical fitness variable i.e. Pull-up scores
- A significant difference was observed between three levels of socio-economic status (High, Above average and Average) with second physical fitness variable i.e. second physical fitness variable i.e. Shuttle run (in sec) scores of sports persons of North Karnataka
- The sports persons of North Karnataka belongs to High SES and above average SES level do not differs significantly with mean second physical fitness variable i.e. Shuttle run (in sec) scores
- The sports persons of North Karnataka belong to High SES and average SES level differs significantly with mean second physical fitness variable i.e. Shuttle run (in sec) scores
- The sports persons of North Karnataka belong to above average SES and average SES level differs significantly with mean second physical fitness variable i.e. Shuttle run (in sec) scores

- A significant difference was observed between three levels of socio-economic status (High, Above average and Average) with third physical fitness variable i.e. Standing broad jump (meters) scores of sports persons of North Karnataka
- The sports persons of North Karnataka belongs to High SES and above average SES level differs significantly with mean third physical fitness variable i.e. Standing broad jump (meters) scores
- The sports persons of North Karnataka belong to High SES and average SES level differs significantly with mean third physical fitness variable i.e. Standing broad jump (meters) scores
- The sports persons of North Karnataka belong to Above average SES and average SES level differs significantly with mean third physical fitness variable i.e. Standing broad jump (meters) scores
- A significant difference was observed between three levels of socio-economic status (High, Above average and Average) with fourth physical fitness variable i.e. Bent-knee-sit up (sit up) scores of sports persons of North Karnataka
- The sports persons of North Karnataka belongs to High SES and above average SES level differs significantly with mean fourth physical fitness variable i.e. Bent-knee-sit up (sit up) scores
- The sports persons of North Karnataka belong to High SES and average SES level differs significantly with mean fourth physical fitness variable i.e. Bent-knee-sit up (sit up) scores
- The sports persons of North Karnataka belong to Above average SES and average SES level differs significantly with mean fourth physical fitness variable i.e. Bent-knee-sit up (sit up) scores
- A significant difference was observed between three levels of socio-economic status (High, Above average and Average) with fifth physical fitness variable i.e. 50 yard dash (sec) scores of sports persons of North Karnataka
- The sports persons of North Karnataka belongs to High SES and above average SES levels differs significantly with fifth physical fitness variable i.e. 50 yard dash (sec) scores
- The sports persons of North Karnataka belongs to High SES and above average SES levels differs significantly with fifth physical fitness variable i.e. 50 yard dash (sec) scores
- The sports persons of North Karnataka belongs to High SES and above average SES levels do not differs significantly with fifth physical fitness variable i.e. 50 yard dash (sec) scores
- A significant difference was observed between three levels of socio-economic status (High, Above average and Average) with sixth physical fitness variable i.e. 600-yard dash (sec) scores of sports persons of North Karnataka

- The sports persons of North Karnataka belongs to High SES and above average SES levels do not differs significantly with sixth physical fitness variable i.e. 600-yard dash (sec) scores
- The sports persons of North Karnataka belong to High SES and average SES level differs significantly with sixth physical fitness variable i.e. 600-yard dash (sec) scores
- The sports persons of North Karnataka belong to Above average SES and average SES level differs significantly with sixth physical fitness variable i.e. 600-yard dash (sec) scores

Conclusions

- The sports persons of North Karnataka belong to different levels of socio-economic status (High, Above average and Average) have different mental toughness scores
- The sports persons of North Karnataka belongs to High SES have significant and higher mean mental toughness scores as compared to sports persons belongs to Above average SES
- The sports persons of North Karnataka belongs to High SES have significant and higher mean mental toughness scores as compared to sports persons belongs to average SES
- The sports persons of North Karnataka belongs to Above average SES (have significant and higher mean mental toughness scores as compared to sports persons belongs to average
- The sports persons of North Karnataka belong to different levels of socio-economic status (High, Above average and Average) have similar Pull-up scores
- The sports persons of North Karnataka belongs to High SES and Above average SES have similar first physical fitness variable i.e. Pull-up scores
- The sports persons of North Karnataka belongs to High SES and average SES have similar first physical fitness variable i.e. Pull-up scores
- The sports persons of North Karnataka belongs to Above average SES and average SES have similar first physical fitness variable i.e. Pull-up scores
- The sports persons of North Karnataka belong to different levels of socio-economic status (High, Above average and Average) have different second physical fitness variable i.e. Shuttle run (in sec) scores
- The sports persons of North Karnataka belongs to High SES and Above average SES have similar second physical fitness variable i.e. Shuttle run (in sec) scores
- The sports persons of North Karnataka belongs to High SES have significant and higher second physical fitness variable i.e. Shuttle run (in sec) scores as compared to sports persons belongs to average SES
- The sports persons of North Karnataka belongs to High SES have significant and higher second physical fitness variable i.e. Shuttle run (in sec) scores as compared to sports persons belongs to average SES

- The sports persons of North Karnataka belong to different levels of socio-economic status (High, Above average and Average) have different third physical fitness variable i.e. Standing broad jump (meters) scores
- The sports persons of North Karnataka belongs to High SES have significant and higher third physical fitness variable i.e. Standing broad jump (meters) scores as compared to sports persons belongs to Above average
- The sports persons of North Karnataka belongs to High SES have significant and higher third physical fitness variable i.e. Standing broad jump (meters) scores as compared to sports persons belongs to average SES
- The sports persons of North Karnataka belongs to Above average SES have significant and higher third physical fitness variable i.e. Standing broad jump (meters) scores as compared to sports persons belongs to average SES
- The sports persons of North Karnataka belong to different levels of socio-economic status (High, Above average and Average) have different fourth physical fitness variable i.e. Bent-knee-sit up (sit up) scores
- The sports persons of North Karnataka belongs to High SES have significant and smaller fourth physical fitness variable i.e. Bent-knee-sit up (sit up) scores as compared to sports persons belongs to Above average SES
- The sports persons of North Karnataka belongs to High SES have significant and higher fourth physical fitness variable i.e. Bent-knee-sit up (sit up) scores as compared to sports persons belongs to average SES
- The sports persons of North Karnataka belongs to Above average SES have significant and higher fourth physical fitness variable i.e. Bent-knee-sit up (sit up) scores as compared to sports persons belongs to average SES
- The sports persons of North Karnataka belong to different levels of socio-economic status (High, Above average and Average) have different fifth physical fitness variable i.e. 50 yard dash (sec) scores
- The sports persons of North Karnataka belongs to High SES have significant and higher fifth physical fitness variable i.e. 50 yard dash (sec) scores as compared to sports persons belongs to Above average SES
- The sports persons of North Karnataka belongs to High SES have significant and higher fifth physical fitness variable i.e. 50 yard dash (sec) scores as compared to sports persons belongs to average SES
- The sports persons of North Karnataka belongs to above average SES and average SES have similar fifth physical fitness variable i.e. 50 yard dash (sec) scores

- The sports persons of North Karnataka belong to different levels of socio-economic status (High, Above average and Average) have different sixth physical fitness variable i.e. 600-yard dash (sec) scores
- The sports persons of North Karnataka belongs to High SES and Above average SES have similar sixth physical fitness variable i.e. 600-yard dash (sec) scores
- The sports persons of North Karnataka belongs to High SES have significant and higher sixth physical fitness variable i.e. 600-yard dash (sec) scores as compared to sports persons belongs to average SES
- The sports persons of North Karnataka belongs to Above average SES have significant and higher sixth physical fitness variable i.e. 600-yard dash (sec) scores as compared to sports persons belongs to average SES
-

Correlation analysis

Findings

- A significant and positive correlation was observed between mental toughness and socio economic status scores of sports persons of North Karnataka
- A significant and positive correlation was observed between mental toughness and dimension of socio economic status i.e. education scores of sports persons of North Karnataka
- No significant and positive correlation was observed between mental toughness and dimension of socio economic status i.e. profession scores of sports persons of North Karnataka
- No significant and negative correlation was observed between mental toughness and dimension of socio economic status i.e. monthly income scores of sports persons of North Karnataka
- A significant and positive correlation was observed between mental toughness and dimension of socio economic status i.e. total wealth in cash or debts scores of sports persons of North Karnataka
- A significant and positive correlation was observed between mental toughness and dimension of socio economic status i.e. property scores of sports persons of North Karnataka
- A significant and positive correlation was observed between mental toughness and dimension of socio economic status i.e. surrounding locality scores of sports persons of North Karnataka
- A significant and positive correlation was observed between mental toughness and dimension of socio economic status i.e. social status scores of sports persons of North Karnataka
- A significant and positive correlation was observed between physical fitness variable i.e. Pull-ups (N) and socio economic status scores of sports persons of North Karnataka

- A significant and positive correlation was observed between physical fitness variable i.e. Pull-ups (N) and dimension of socio economic status i.e. education, profession, monthly income, total wealth in cash or debts, property, surrounding locality, social status scores of sports persons of North Karnataka
- No significant and positive correlation was observed between physical fitness variable i.e. Pull-ups (N) and dimension of socio economic status i.e. profession scores of sports persons of North Karnataka
- No significant and positive correlation was observed between physical fitness variable i.e. Pull-ups (N) and dimension of socio economic status i.e. monthly income scores of sports persons of North Karnataka
- A significant and positive correlation was observed between physical fitness variable i.e. Pull-ups (N) and dimension of socio economic status i.e. total wealth in cash or debts scores of sports persons of North Karnataka
- A significant and positive correlation was observed between physical fitness variable i.e. Pull-ups (N) and dimension of socio economic status i.e. property scores of sports persons of North Karnataka
- A significant and positive correlation was observed between physical fitness variable i.e. Pull-ups (N) and dimension of socio economic status i.e. surrounding locality scores of sports persons of North Karnataka
- A significant and positive correlation was observed between physical fitness variable i.e. Pull-ups (N) and dimension of socio economic status i.e. social status scores of sports persons of North Karnataka
- significant and positive correlation was observed between physical fitness variable i.e. Shuttle run (in sec) and socio economic status scores of sports persons of North Karnataka
- A significant and positive correlation was observed between physical fitness variable i.e. Shuttle run (in sec) and dimension of socio economic status i.e. education scores of sports persons of North Karnataka
- No significant and positive correlation was observed between physical fitness variable i.e. Shuttle run (in sec) and dimension of socio economic status i.e. profession scores of sports persons of North Karnataka
- No significant and positive correlation was observed between physical fitness variable i.e. Shuttle run (in sec) and dimension of socio economic status i.e. monthly income scores of sports persons of North Karnataka
- A significant and positive correlation was observed between physical fitness variable i.e. Shuttle run (in sec) and dimension of socio economic status i.e. total wealth in cash or debts scores of sports persons of North Karnataka

- A significant and positive correlation was observed between physical fitness variable i.e. Shuttle run (in sec) and dimension of socio economic status i.e. property scores of sports persons of North Karnataka
- A significant and positive correlation was observed between physical fitness variable i.e. Shuttle run (in sec) and dimension of socio economic status i.e. surrounding locality scores of sports persons of North Karnataka
- No significant and positive correlation was observed between physical fitness variable i.e. Shuttle run (in sec) and dimension of socio economic status i.e. social status scores of sports persons of North Karnataka
- A significant and positive correlation was observed between physical fitness variable i.e. Standing broad jump (meters) and socio economic status scores of sports persons of North Karnataka
- A significant and positive correlation was observed between physical fitness variable i.e. Standing broad jump (meters) and dimension of socio economic status i.e. education scores of sports persons of North Karnataka
- No significant and positive correlation was observed between physical fitness variable i.e. Standing broad jump (meters) and dimension of socio economic status i.e. profession scores of sports persons of North Karnataka
- No significant and negative correlation was observed between physical fitness variable i.e. Standing broad jump (meters) and dimension of socio economic status i.e. monthly income scores of sports persons of North Karnataka
- A significant and positive correlation was observed between physical fitness variable i.e. Standing broad jump (meters) and dimension of socio economic status i.e. total wealth in cash or debts scores of sports persons of North Karnataka
- A significant and positive correlation was observed between physical fitness variable i.e. Standing broad jump (meters) and dimension of socio economic status i.e. property scores of sports persons of North Karnataka
- A significant and positive correlation was observed between physical fitness variable i.e. Standing broad jump (meters) and dimension of socio economic status i.e. surrounding locality scores of sports persons of North Karnataka
- A significant and positive correlation was observed between physical fitness variable i.e. Standing broad jump (meters) and dimension of socio economic status i.e. social status scores of sports persons of North Karnataka
- A significant and positive correlation was observed between physical fitness variable i.e. Bent-knee-sit up (sit up) and socio economic status scores of sports persons of North Karnataka

- A significant and positive correlation was observed between physical fitness variable i.e. Bent-knee-sit up (sit up) and dimension of socio economic status i.e. education scores of sports persons of North Karnataka
- A significant and positive correlation was observed between physical fitness variable i.e. Bent-knee-sit up (sit up) and dimension of socio economic status i.e. profession scores of sports persons of North Karnataka
- No significant and positive correlation was observed between physical fitness variable i.e. Bent-knee-sit up (sit up) and dimension of socio economic status i.e. monthly income scores of sports persons of North Karnataka
- A significant and positive correlation was observed between physical fitness variable i.e. Bent-knee-sit up (sit up) and dimension of socio economic status i.e. total wealth in cash or debts scores of sports persons of North Karnataka
- A significant and positive correlation was observed between physical fitness variable i.e. Bent-knee-sit up (sit up) and dimension of socio economic status i.e. property scores of sports persons of North Karnataka
- A significant and positive correlation was observed between physical fitness variable i.e. Bent-knee-sit up (sit up) and dimension of socio economic status i.e. surrounding locality scores of sports persons of North Karnataka
- No significant and positive correlation was observed between physical fitness variable i.e. Bent-knee-sit up (sit up) and dimension of socio economic status i.e. social status scores of sports persons of North Karnataka
- A significant and positive correlation was observed between physical fitness variable i.e. 50 yard dash (sec) and socio economic status scores of sports persons of North Karnataka
- A significant and positive correlation was observed between physical fitness variable i.e. 50 yard dash (sec) and dimension of socio economic status i.e. education scores of sports persons of North Karnataka
- A significant correlation was observed between physical fitness variable i.e. 50 yard dash (sec) and dimension of socio economic status i.e. profession scores of sports persons of North Karnataka
- No significant correlation was observed between physical fitness variable i.e. 50 yard dash (sec) and dimension of socio economic status i.e. monthly income scores of sports persons of North Karnataka
- A significant and positive correlation was observed between physical fitness variable i.e. 50 yard dash (sec) and dimension of socio economic status i.e. total wealth in cash or debts scores of sports persons of North Karnataka

- A significant and positive correlation was observed between physical fitness variable i.e. 50 yard dash (sec) and dimension of socio economic status i.e. property scores of sports persons of North Karnataka
- A significant and positive correlation was observed between physical fitness variable i.e. 50 yard dash (sec) and dimension of socio economic status i.e. surrounding locality scores of sports persons of North Karnataka
- A significant and positive correlation was observed between physical fitness variable i.e. 50 yard dash (sec) and dimension of socio economic status i.e. social status scores of sports persons of North Karnataka
- A significant and positive correlation was observed between physical fitness variable i.e. 600-yard dash (sec) and socio economic status scores of sports persons of North Karnataka
- A significant and positive correlation was observed between physical fitness variable i.e. 600-yard dash (sec) and dimension of socio economic status i.e. education scores of sports persons of North Karnataka
- No significant and positive correlation was observed between physical fitness variable i.e. 600-yard dash (sec) and dimension of socio economic status i.e. profession scores of sports persons of North Karnataka
- No significant correlation was observed between physical fitness variable i.e. 600-yard dash (sec) and dimension of socio economic status i.e. monthly income scores of sports persons of North Karnataka
- A significant and positive correlation was observed between physical fitness variable i.e. 600-yard dash (sec) and dimension of socio economic status i.e. total wealth in cash or debts scores of sports persons of North Karnataka
- A significant and positive correlation was observed between physical fitness variable i.e. 600-yard dash (sec) and dimension of socio economic status i.e. property scores of sports persons of North Karnataka
- A significant and positive correlation was observed between physical fitness variable i.e. 600-yard dash (sec) and dimension of socio economic status i.e. surrounding locality scores of sports persons of North Karnataka
- A significant and positive correlation was observed between physical fitness variable i.e. 600-yard dash (sec) and dimension of socio economic status i.e. social status scores of sports persons of North Karnataka
- A significant and positive correlation was observed between mental toughness and physical fitness variable i.e. Pull-ups (N) scores of sports persons of North Karnataka
- A significant and positive correlation was observed between mental toughness and physical fitness variable i.e. Shuttle run (in sec) scores of sports persons of North Karnataka

- A significant and positive correlation was observed between mental toughness and physical fitness variable i.e. Standing broad jump (meters) scores of sports persons of North Karnataka
- A significant and positive correlation was observed between mental toughness and physical fitness variable i.e. Bent-knee-sit up (sit up) scores of sports persons of North Karnataka
- A significant and positive correlation was observed between mental toughness and physical fitness variable i.e. 50 yard dash (sec) scores of sports persons of North Karnataka
- A significant and positive correlation was observed between mental toughness and physical fitness variable i.e. 600-yard dash (sec) scores of sports persons of North Karnataka

CONCLUSIONS

- The mental toughness and socio economic status scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in socio economic status scores of sports persons of North Karnataka is as supporting in increase (decrease) in their mental toughness scores
- The mental toughness and dimension of socio economic status i.e. Education scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in dimension of socio economic status i.e. Education scores of sports persons of North Karnataka is as supporting in increase (decrease) in their mental toughness scores
- The mental toughness and dimension of socio economic status i.e. Profession scores of sports persons of North Karnataka are independent on each other. In another words, the increases (decreases) in dimension of socio economic status i.e. Profession scores of sports persons of North Karnataka is as not supporting in increase (decrease) in their mental toughness scores
- The mental toughness and dimension of socio economic status i.e. Monthly income scores of sports persons of North Karnataka are independent on each other. In another words, the not significantly increases (decreases) in dimension of socio economic status i.e. Monthly income scores of sports persons of North Karnataka is as not supporting in increase (decrease) in their mental toughness scores
- The mental toughness and dimension of socio economic status i.e. Total wealth in cash or debts scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in dimension of socio economic status i.e. Total wealth in cash or debts scores of sports persons of North Karnataka is as supporting in increase (decrease) in their mental toughness scores
- The mental toughness and socio economic status scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in dimension of socio economic status i.e. Property scores of sports persons of North Karnataka is as supporting in increase (decrease) in their mental toughness scores

- The mental toughness and dimension of socio economic status i.e. surrounding locality scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in dimension of socio economic status i.e. Surrounding locality scores of sports persons of North Karnataka is as supporting in increase (decrease) in their mental toughness scores
- The mental toughness and dimension of socio economic status i.e. Social status scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in dimension of socio economic status i.e. Social status scores of sports persons of North Karnataka is as supporting in increase (decrease) in their mental toughness scores
- The physical fitness variable i.e. Pull-ups (N) and socio economic status scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in socio economic status scores of sports persons of North Karnataka is as supporting in increase (decrease) in their physical fitness variable i.e. Pull-ups (N) scores
- The physical fitness variable i.e. Pull-ups (N) and dimension of socio economic status i.e. education scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in dimension of socio economic status i.e. education scores of sports persons of North Karnataka is as supporting in increase (decrease) in their physical fitness variable i.e. Pull-ups (N) scores
- The physical fitness variable i.e. Pull-ups (N) and dimension of socio economic status i.e. profession scores of sports persons of North Karnataka are independent on each other. In another words, the increases (decreases) in dimension of socio economic status i.e. profession scores of sports persons of North Karnataka is as not supporting in increase (decrease) in their physical fitness variable i.e. Pull-ups (N) scores
- The physical fitness variable i.e. Pull-ups (N) and dimension of socio economic status i.e. monthly income scores of sports persons of North Karnataka are independent on each other. In another words, the not significantly increases (decreases) in dimension of socio economic status i.e. monthly income scores of sports persons of North Karnataka is as not supporting in increase (decrease) in their physical fitness variable i.e. Pull-ups (N) scores
- The physical fitness variable i.e. Pull-ups (N) and dimension of socio economic status i.e. total wealth in cash or debts scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in dimension of socio economic status i.e. total wealth in cash or debts scores of sports persons of North Karnataka is as supporting in increase (decrease) in their physical fitness variable i.e. Pull-ups (N) scores
- The physical fitness variable i.e. Pull-ups (N) and socio economic status scores of sports persons of North Karnataka are dependent on each other. In another words, the increases

(decreases) in dimension of socio economic status i.e. property scores of sports persons of North Karnataka is as supporting in increase (decrease) in their physical fitness variable i.e. Pull-ups (N) scores

- The physical fitness variable i.e. Pull-ups (N) and dimension of socio economic status i.e. surrounding locality scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in dimension of socio economic status i.e. surrounding locality scores of sports persons of North Karnataka is as supporting in increase (decrease) in their physical fitness variable i.e. Pull-ups (N) scores
- The physical fitness variable i.e. Pull-ups (N) and dimension of socio economic status i.e. social status scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in dimension of socio economic status i.e. social status scores of sports persons of North Karnataka is as supporting in increase (decrease) in their physical fitness variable i.e. Pull-ups (N) scores
- The physical fitness variable i.e. Shuttle run (in sec) and socio economic status scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in socio economic status scores of sports persons of North Karnataka is as supporting in increase (decrease) in their physical fitness variable i.e. Shuttle run (in sec) scores
- The physical fitness variable i.e. Shuttle run (in sec) and dimension of socio economic status i.e. education scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in dimension of socio economic status i.e. education scores of sports persons of North Karnataka is as supporting in increase (decrease) in their physical fitness variable i.e. Shuttle run (in sec) scores
- The physical fitness variable i.e. Shuttle run (in sec) and dimension of socio economic status i.e. profession scores of sports persons of North Karnataka are independent on each other. In another words, the increases (decreases) in dimension of socio economic status i.e. profession scores of sports persons of North Karnataka is as not supporting in increase (decrease) in their physical fitness variable i.e. Shuttle run (in sec) scores
- The physical fitness variable i.e. Shuttle run (in sec) and dimension of socio economic status i.e. monthly income scores of sports persons of North Karnataka are independent on each other. In another words, the not significantly increases (decreases) in dimension of socio economic status i.e. monthly income scores of sports persons of North Karnatakais as not supporting to increase (decrease) in their physical fitness variable i.e. Shuttle run (in sec) scores
- The physical fitness variable i.e. Shuttle run (in sec) and dimension of socio economic status i.e. total wealth in cash or debts scores of sports persons of North Karnataka are dependent on

each other. In another words, the increases (decreases) in dimension of socio economic status i.e. total wealth in cash or debts scores of sports persons of North Karnataka is as supporting to increase (decrease) in their physical fitness variable i.e. total wealth in cash or debts scores

- The physical fitness variable i.e. Shuttle run (in sec) and socio economic status scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in dimension of socio economic status i.e. property scores of sports persons of North Karnataka is as supporting to increase (decrease) in their physical fitness variable i.e. Shuttle run (in sec) scores
- The physical fitness variable i.e. Shuttle run (in sec) and dimension of socio economic status i.e. surrounding locality scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in dimension of socio economic status i.e. surrounding locality scores of sports persons of North Karnataka is as supporting to increase (decrease) in their physical fitness variable i.e. Shuttle run (in sec) scores
- The physical fitness variable i.e. Shuttle run (in sec) and dimension of socio economic status i.e. social status scores of sports persons of North Karnataka are independent on each other. In another words, the increases (decreases) in dimension of socio economic status i.e. social status scores of sports persons of North Karnataka is as not supporting to increase (decrease) in their physical fitness variable i.e. Shuttle run (in sec) scores
- The physical fitness variable i.e. standing broad jump (meters) and socio economic status scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in socio economic status scores of sports persons of North Karnataka is as supporting to increase (decrease) in their physical fitness variable i.e. Standing broad jump (meters) scores
- The physical fitness variable i.e. standing broad jump (meters) and dimension of socio economic status i.e. education scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in dimension of socio economic status i.e. education scores of sports persons of North Karnataka is as supporting in increase (decrease) to their physical fitness variable i.e. Standing broad jump (meters) scores
- The physical fitness variable i.e. standing broad jump (meters) and dimension of socio economic status i.e. profession scores of sports persons of North Karnataka are independent on each other. In another words, the increases (decreases) in dimension of socio economic status i.e. profession scores of sports persons of North Karnataka is as not supporting in increase (decrease) in their physical fitness variable i.e. Standing broad jump (meters) scores
- The physical fitness variable i.e. standing broad jump (meters) and dimension of socio economic status i.e. monthly income scores of sports persons of North Karnataka are independent on each other. In another words, the not significantly increases (decreases) in

dimension of socio economic status i.e. monthly income scores of sports persons of North Karnataka is as not supporting to increase (decrease) in their physical fitness variable i.e. Standing broad jump (meters) scores

- The physical fitness variable i.e. standing broad jump (meters) and dimension of socio economic status i.e. total wealth in cash or debts scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in dimension of socio economic status i.e. total wealth in cash or debts scores of sports persons of North Karnataka is as supporting to increase (decrease) in their physical fitness variable i.e. Standing broad jump (meters) scores
- The physical fitness variable i.e. standing broad jump (meters) and socio economic status scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in dimension of socio economic status i.e. property scores of sports persons of North Karnataka is as supporting to increase (decrease) in their physical fitness variable i.e. Standing broad jump (meters) scores
- The physical fitness variable i.e. standing broad jump (meters) and dimension of socio economic status i.e. surrounding locality scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in dimension of socio economic status i.e. surrounding locality scores of sports persons of North Karnataka is as supporting to increase (decrease) in their physical fitness variable i.e. Standing broad jump (meters) scores
- The physical fitness variable i.e. standing broad jump (meters) and dimension of socio economic status i.e. social status scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in dimension of socio economic status i.e. social status scores of sports persons of North Karnataka is as supporting to increase (decrease) in their physical fitness variable i.e. Standing broad jump (meters) scores
- The physical fitness variable i.e. Bent-knee-sit up (sit up) and socio economic status scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in socio economic status scores of sports persons of North Karnataka is as supporting to increase (decrease) in their physical fitness variable i.e. Bent-knee-sit up (sit up) scores
- The physical fitness variable i.e. Bent-knee-sit up (sit up) and dimension of socio economic status i.e. education scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in dimension of socio economic status i.e. education scores of sports persons of North Karnataka is as supporting in increase (decrease) to their physical fitness variable i.e. Bent-knee-sit up (sit up) scores

- The physical fitness variable i.e. Bent-knee-sit up (sit up) and dimension of socio economic status i.e. profession scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in dimension of socio economic status i.e. profession scores of sports persons of North Karnataka is as supporting in increase (decrease) in their physical fitness variable i.e. Bent-knee-sit up (sit up) scores
- The physical fitness variable i.e. Bent-knee-sit up (sit up) and dimension of socio economic status i.e. monthly income scores of sports persons of North Karnataka are independent on each other. In another words, the not significantly increases (decreases) in dimension of socio economic status i.e. monthly income scores of sports persons of North Karnataka is as not supporting to increase (decrease) in their physical fitness variable i.e. Bent-knee-sit up (sit up) scores
- The physical fitness variable i.e. Bent-knee-sit up (sit up) and dimension of socio economic status i.e. total wealth in cash or debts scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in dimension of socio economic status i.e. total wealth in cash or debts scores of sports persons of North Karnataka is as supporting to increase (decrease) in their physical fitness variable i.e. Bent-knee-sit up (sit up) scores
- The physical fitness variable i.e. Bent-knee-sit up (sit up) and socio economic status scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in dimension of socio economic status i.e. property scores of sports persons of North Karnataka is as supporting to increase (decrease) in their physical fitness variable i.e. Bent-knee-sit up (sit up) scores
- The physical fitness variable i.e. Bent-knee-sit up (sit up) and dimension of socio economic status i.e. surrounding locality scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in dimension of socio economic status i.e. surrounding locality scores of sports persons of North Karnataka is as supporting to increase (decrease) in their physical fitness variable i.e. Bent-knee-sit up (sit up) scores
- The physical fitness variable i.e. Bent-knee-sit up (sit up) and dimension of socio economic status i.e. social status scores of sports persons of North Karnataka are independent on each other. In another words, the increases (decreases) in dimension of socio economic status i.e. social status scores of sports persons of North Karnataka is as not supporting to increase (decrease) in their physical fitness variable i.e. Bent-knee-sit up (sit up) scores
- The physical fitness variable i.e. 50 yard dash (sec) and socio economic status scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in socio economic status scores of sports persons of North Karnataka is as

supporting to increase (decrease) in their physical fitness variable i.e. 50 yard dash (sec) scores

- The physical fitness variable i.e. 50 yard dash (sec) and dimension of socio economic status i.e. education scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in dimension of socio economic status i.e. education scores of sports persons of North Karnataka is as supporting in increase (decrease) to their physical fitness variable i.e. 50 yard dash (sec) scores
- The physical fitness variable i.e. 50 yard dash (sec) and dimension of socio economic status i.e. profession scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in dimension of socio economic status i.e. profession scores of sports persons of North Karnataka is as not supporting in increase (decrease) in their physical fitness variable i.e. 50 yard dash (sec) scores
- The physical fitness variable i.e. 50 yard dash (sec) and dimension of socio economic status i.e. monthly income scores of sports persons of North Karnataka are independent on each other. In another words, the not significantly increases (decreases) in dimension of socio economic status i.e. monthly income scores of sports persons of North Karnataka is as not supporting to increase (decrease) in their physical fitness variable i.e. 50 yard dash (sec) scores
- The physical fitness variable i.e. 50 yard dash (sec) and dimension of socio economic status i.e. total wealth in cash or debts scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in dimension of socio economic status i.e. total wealth in cash or debts scores of sports persons of North Karnataka is as supporting to increase (decrease) in their physical fitness variable i.e. 50 yard dash (sec) scores
- The physical fitness variable i.e. 50 yard dash (sec) and socio economic status scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in dimension of socio economic status i.e. property scores of sports persons of North Karnataka is as supporting to increase (decrease) in their physical fitness variable i.e. 50 yard dash (sec) scores
- The physical fitness variable i.e. 50 yard dash (sec) and dimension of socio economic status i.e. surrounding locality scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in dimension of socio economic status i.e. surrounding locality scores of sports persons of North Karnataka is as supporting to increase (decrease) in their physical fitness variable i.e. 50 yard dash (sec) scores
- The physical fitness variable i.e. 50 yard dash (sec) and dimension of socio economic status i.e. social status scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in dimension of socio economic status i.e. social

status scores of sports persons of North Karnataka is as supporting to increase (decrease) in their physical fitness variable i.e. 50 yard dash (sec) scores

- The physical fitness variable i.e. 600-yard dash (sec) and socio economic status scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in socio economic status scores of sports persons of North Karnataka is as supporting to increase (decrease) in their physical fitness variable i.e. 600-yard dash (sec) scores
- The physical fitness variable i.e. 600-yard dash (sec) and dimension of socio economic status i.e. education scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in dimension of socio economic status i.e. education scores of sports persons of North Karnataka is as supporting in increase (decrease) to their physical fitness variable i.e. 600-yard dash (sec) scores
- The physical fitness variable i.e. 600-yard dash (sec) and dimension of socio economic status i.e. profession scores of sports persons of North Karnataka are independent on each other. In another words, the increases (decreases) in dimension of socio economic status i.e. profession scores of sports persons of North Karnataka is as not supporting in increase (decrease) in their physical fitness variable i.e. 600-yard dash (sec) scores
- The physical fitness variable i.e. 600-yard dash (sec) and dimension of socio economic status i.e. monthly income scores of sports persons of North Karnataka are independent on each other. In another words, the not significantly increases (decreases) in dimension of socio economic status i.e. monthly income scores of sports persons of North Karnataka is as not supporting to increase (decrease) in their physical fitness variable i.e. 600-yard dash (sec) scores
- The physical fitness variable i.e. 600-yard dash (sec) and dimension of socio economic status i.e. total wealth in cash or debts scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in dimension of socio economic status i.e. total wealth in cash or debts scores of sports persons of North Karnataka is as supporting to increase (decrease) in their physical fitness variable i.e. 600-yard dash (sec) scores
- The physical fitness variable i.e. 600-yard dash (sec) and socio economic status scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in dimension of socio economic status i.e. property scores of sports persons of North Karnataka is as supporting to increase (decrease) in their physical fitness variable i.e. 600-yard dash (sec) scores.
- The physical fitness variable i.e. 600-yard dash (sec) and dimension of socio economic status i.e. surrounding locality scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in dimension of socio economic status i.e.

surrounding locality scores of sports persons of North Karnataka is as supporting to increase (decrease) in their physical fitness variable i.e. 600-yard dash (sec) scores

- The physical fitness variable i.e. 600-yard dash (sec) and dimension of socio economic status i.e. social status scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in dimension of socio economic status i.e. social status scores of sports persons of North Karnataka is as supporting to increase (decrease) in their physical fitness variable i.e. 600-yard dash (sec) scores
- The mental toughness and physical fitness variable i.e. Pull-ups (N) scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in mental toughness scores of sports persons of North Karnataka is as supporting to increase (decrease) in their physical fitness variable i.e. Pull-ups (N)scores
- The mental toughness and physical fitness variable i.e. Shuttle run (in sec) scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in mental toughness scores of sports persons of North Karnataka is as supporting to increase (decrease) in their physical fitness variable i.e. Shuttle run (in sec)scores
- The mental toughness and physical fitness variable i.e. standing broad jump (meters) scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in mental toughness scores of sports persons of North Karnataka is as supporting to increase (decrease) in their Standing broad jump (meters)scores
- The mental toughness and physical fitness variable i.e. Bent-knee-sit up (sit up) scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in mental toughness scores of sports persons of North Karnataka is as supporting to increase (decrease) in their Bent-knee-sit up (sit up) scores
- The mental toughness and physical fitness variable i.e. 50 yard dash (sec) scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in mental toughness scores of sports persons of North Karnataka is as supporting to increase (decrease) in their 50 yard dash (sec)scores
- The mental toughness and physical fitness variable i.e. 600-yard dash (sec) scores of sports persons of North Karnataka are dependent on each other. In another words, the increases (decreases) in mental toughness scores of sports persons of North Karnataka is as supporting to increase (decrease) in their 600-yard dash (sec)scores

STUDIES RELATED TO THE PROBLEM AND RECOMMENDATIONS

1. A study could not be under taken by including other important variables not covered by the present research. Therefore, other variables in relation to mental toughness and physical fitness variables of sports person's of North Karnataka Universities may be considered.
2. A study should taken on comparison of Socio economic status, mental toughness and physical fitness variables other districts may be considered.
3. A study should take on comparison of Socio economic status, mental toughness and physical fitness variables the other states may be considered.
4. This design of the study may be extended to other areas in the future research.

BIBLIOGRAPHY

Abbasi, A. M., Khan, M. A., Ahmad, M., Zafar, M., Khan, H., Muhammad, N., & Sultana, S. (2009). Medicinal plants used for the treatment of jaundice and hepatitis based on socio-economic documentation. *African Journal of Biotechnology*, *8*(8), 1643–1650. https://doi.org/10.5897/AJB2009.000-9243

Ali, M., Nezhad, H., Rahmati, M. M., & Nezhad, M. M. (2012). Relationship between social-economic status of family and adolescents student sport participation. *Annals of Biological Research*, *3*(8), 4012–4016.

Bara Filho, M. G., Scipião Ribeiro, L. C., & Guillén García, F. (2005). Comparison of personality characteristics between high-level Brazilian athletes and non-athletes. *Revista Brasileira de Medicina Do Esporte*, *11*(2), 115–120. https://doi.org/10.1590/S1517-86922005000200004

Bass, R. W., Brown, D. D., Laurson, K. R., & Coleman, M. M. (2013). Physical fitness and academic performance in middle school students. *Acta Paediatrica, International Journal of Paediatrics*, *102*(8), 832–837. https://doi.org/10.1111/apa.12278

Berger, R. A., & Paradis, R. L. (1969). Comparison of physical fitness scores of white and black seventh grade boys of similar socioeconomic level. *Research Quarterly of the American Association for Health, Physical Education and Recreation*, *40*(4), 666–669. https://doi.org/10.1080/10671188.1969.10614899

Bi, Z. W., & Ji, C. Y. (2005). Secular growth changes in body height and weight in children and adolescents in Shandong, China between 1939 and 2000. *Annals of Human Biology*, *32*(5), 650–665. https://doi.org/10.1080/03014460500154418

Boone, T., Robergs, R., Astorino, T., Baker, J., Dalleck, L., Drury, D., Hermann Engals, D., Goulet, E., Gotshall, R., Kravitz, L., Laskin, J., Linderman, J., Marks, D., Mermier, C., Parker, D., Ruby, B., Siegler, J., Tardie, G., Zhou, B., & Grissom, J. B. (2005). Pediatric Exercise Physiology Managing Editor Editor-in-Chief Review Board. *Physical Fitness and Academic Achievement 11 Journal of Exercise Physiologyonline*, *8*(1), 11–25.

Campos, D., Angioluci, F., Daros, B., Carlos, A., Stanganelli, R., & Claudio, L. (2009). Anthropometric Profile and Motor Performance of Junior Badminton Players. *Brazilian Journal of Biomotricity*, *3*(2), 146–151.

Chandrasekaran, S., Anbanandan, A., Suthakarkrishnaswamy, & Annidabalakrishnan. (2012). A

Study of Selective Motor Fitness Components Empowers On Playing Ability among Low and High Performers of State Level Football Players. *International Multidisciplinary Research Journal*, *2*(3), 54–60. https://scienceflora.org/journals/index.php/imrj/article/viewFile/1579/1563

Chen, L. jung, Fox, K. R., Ku, P., & Taun, C. yang. (2013). Fitness Change and Subsequent Academic. *J. Sch Health*, *83*(1), 631–638.

Cleland, V. J., Ball, K., Magnussen, C., Dwyer, T., & Venn, A. (2009). Socioeconomic position and the tracking of physical activity and cardiorespiratory fitness from childhood to adulthood. *American Journal of Epidemiology*, *170*(9), 1069–1077. https://doi.org/10.1093/aje/kwp271

Collard, D. C. M., Chinapaw, M. J. M., Verhagen, E. A. L. M., Bakker, I., & van Mechelen, W. (2010). Effectiveness of a school-based physical activity-related injury prevention program on risk behavior and neuromotor fitness a cluster randomized controlled trial. *International Journal of Behavioral Nutrition and Physical Activity*, *7*, 1–10. https://doi.org/10.1186/1479-5868-7-9

Davis, C. L., & Cooper, S. (2011). Fitness, fatness, cognition, behavior, and academic achievement among overweight children: Do cross-sectional associations correspond to exercise trial outcomes? *Preventive Medicine*, *52*(SUPPL.), S65–S69. https://doi.org/10.1016/j.ypmed.2011.01.020

Elmagd, M. A., Al, O., Assistant, J., Mossa, A. H., Mohammed, C., Elmagd, A., Sami, M., El-Marsafawy, S., & Jadaan, O. Al. (2016). The effect of socio-economic status on the effective students' participation in physical activity: A cross sectional study from Ras Alkhaimah Medical and Health Sciences University-UAE. *International Journal of Physical Education, Sports and Health IJPESH*, *369*(32), 151–155. www.kheljournal.com

Esteban-Cornejo, I., Tejero-González, C. M., Martinez-Gomez, D., Del-Campo, J., González-Galo, A., Padilla-Moledo, C., Sallis, J. F., & Veiga, O. L. (2014). Independent and combined influence of the components of physical fitness on academic performance in youth. *Journal of Pediatrics*, *165*(2). https://doi.org/10.1016/j.jpeds.2014.04.044

Eveland-Sayers, B. M., Farley, R. S., Fuller, D. K., Morgan, D. W., & Caputo, J. L. (2007). Physical Fitness and Academic Achievement in Elementary School Children. *Medicine & Science in Sports & Exercise*, *39*(Supplement), S399. https://doi.org/10.1249/01.mss.0000274573.54238.aa

GAURAV, V. (2014). Anthropometric characteristics of Indian volleyball players in relation to their performance level. *Turkish Journal of Sport and Exercise*, *16*(1), 86–86. https://doi.org/10.15314/tjse.201416168

Gaurav, V., Kumar, R., Singh, M., & Bhanot, P. (2015). Anthropometric Measurements of Volleyball

Players at Different Level of Competition. *International Journal of Multidisciplinary and Current Research*, *3*, 999–1002.

Gyenis, G., & Joubert, K. (2004). Socioeconomic determinants of anthropometric trends among Hungarian youth. *Economics and Human Biology*, *2*(2), 321–333. https://doi.org/10.1016/j.ehb.2004.03.001

Haapala, E. (2012). Physical Activity, Academic Performance and Cognition in Children and Adolescents. A Systematic Review. *Baltic Journal of Health and Physical Activity*, *4*(1). https://doi.org/10.2478/v10131-012-0007-y

Haapala, E. A. (2013). Cardiorespiratory fitness and motor skills in relation to cognition and academic performance in children - A review. *Journal of Human Kinetics*, *36*(1), 55–68. https://doi.org/10.2478/hukin-2013-0006

Haapala, E. A., Poikkeus, A. M., Tompuri, T., Kukkonen-Harjula, K., Leppänen, P. H. T., Lindi, V., & Lakka, T. A. (2014). Associations of motor and cardiovascular performance with academic skills in children. *Medicine and Science in Sports and Exercise*, *46*(5), 1016–1024. https://doi.org/10.1249/MSS.0000000000000186

Hoffmann, R., Ging, L. C., & Ramasamy, B. (2002). The Socio-Economic Determinants of International Soccer Performance. *Journal of Applied Economics*, *5*(2), 253–272. https://doi.org/10.1080/15140326.2002.12040579

Hong, H. R., Kim, S. U., & Kang, H. S. (2009). Physical activity and metabolic syndrome in korean children. *International Journal of Sports Medicine*, *30*(9), 677–683. https://doi.org/10.1055/s-0029-1224172

Kamphuis, C. B. M., Van Lenthe, F. J., Giskes, K., Huisman, M., Brug, J., & Mackenbach, J. P. (2008). Socioeconomic status, environmental and individual factors, and sports participation. *Medicine and Science in Sports and Exercise*, *40*(1), 71–81. https://doi.org/10.1249/mss.0b013e318158e467

Kaneria, Y., Singh, P., & Sharma, D. C. (2006). Prevalence of overweight and obesity in relation to socio-economic conditions in two different groups of school-age children of Udaipur City (Rajasthan). *Journal, Indian Academy of Clinical Medicine*, *7*(2), 133–135.

Kantomaa, M. T., Stamatakis, E., Kankaanpää, A., Kaakinen, M., Rodriguez, A., Taanila, A., Ahonen, T., Järvelin, M. R., & Tammelin, T. (2013). Physical activity and obesity mediate the association between childhood motor function and adolescents' academic achievement. *Proceedings of the National Academy of Sciences of the United States of America*, *110*(5), 1917–1922.

https://doi.org/10.1073/pnas.1214574110

KU. PUSHPALATA, & M. DESHMUKH. (2013). A COMPARATIVE STUDY OF SOCIO-ECONOMIC\nSTATUS IN INTERCOLLEGIATE PARTICIPATION\nOF KABADDI AND FOOTBALL PLAYERS. *Indian Streams Research Journal*, *2*(12). http://www.isrj.net/UploadedData/1857.pdf

Kuloor, H. (2017). *Socio-economic status of all India inter-university participants of Mangalore University in the events of track & field and weight lifting*. *4*(1), 189–191.

Moradi, J., Mousavi, M. V., & Amirtash, A. M. (2013). *The role of mental toughness in acquisition and retention of a sports skill*. *3*(6), 438–442.

Mostafai, A. (2012). The Comparison between athlete women and non athlete women regarding to mental health and happiness. *Scholars Research Library Annals of Biological Research*, *3*(5), 2144–2147. http://scholarsresearchlibrary.com/archive.html

Nasibeh Almasi*, Hossein, M. hussein R., & Eydi, H. (2014). The Relationship between Demographic Characteristics, Socioeconomic Conditions and Motivation of Participants in Public Sports in Iran. *European Journal of Sports and Exercise Science, 2014, 3 (4):23-26*, *3*(4), 23–26.

Nigan, I. B., Gouthon, P., Arèmou, M., Falola, J.-M., Dansou, H. P., Houngbélagnon, J. K., Nouatin, B. K., Tonon, B. A., & Nigan, R. Y.-T. B. (2013). Changes of Selected Haematological Parameters in a Female Team during the 25th African Handball Winners' Cup Played at Cotonou (Benin). *Advances in Physical Education*, *03*(01), 43–49. https://doi.org/10.4236/ape.2013.31007

Patel, D. S., Pandey, U., & Saxena, S. (2011). Comparative Study Of Mental Toughness Among Kabaddi Players Of Different Level. *Indian Journal of Applied Research*, *1*(3), 201–202. https://doi.org/10.15373/2249555x/dec2011/69

Petroski, E. L., Fraro, J. Del, Fidelix, Y. L., Silva, D. A. S., Pires-Neto, C. S., Dourado, A. C., Rocha, M. A., Stanganelli, L. C. R., Oncken, P., & Viera, F. S. (2013). Anthropometric, morphological and somatotype characteristics of athletes of the Brazilian Men's volleyball team: an 11-year descriptive study. *RBCDH-Brazilian Journal of Kinanthropometry and Human Performance*, *15*(2), 184–192.

R kour Dr.surjit singh. (2014). SOCIO-ECONOMIC STATUS OF CRICKET AND HOCKEY PLAYERS OF JAMMU & KASHMIR. *INTERNATIONAL JOURNAL OF BEHAVIORAL SOCIAL AND MOVEMENT SCIENCES*, *03*(02), 120–125.

Ragab, M. (2015). The effects of mental toughness training on athletic coping skills and shooting effectiveness for national handball players. *Science, Movement and Health*, *2*(3), 74–80.

Rao, N. R. C., & Rao, R. V. L. N. R. (2015). Effect of selected Physical Fitness Components on Volley-Ball players in spiking performance at various Atmospheric Conditions. *Research Journal of Physical Education Sciences*, *3*(11), 4–7.

Ridgers, N. D., Tóth, M., & Uvacsek, M. (2009). Physical activity levels of Hungarian children during school recess. *Preventive Medicine*, *49*(5), 410–412. https://doi.org/10.1016/j.ypmed.2009.08.008

Rintaugu, E. G., Mwangi, F. M., & Bailasha, N. K. (2013). Negotiating Constraints to Sport Participation of University Soccer Players. *Journal of Education and Practice*, *4*(23), 146–154.

Sardinha, L. B., Marques, A., Martins, S., Palmeira, A., & Minderico, C. (2014). Fitness, fatness, and academic performance in seventh-grade elementary school students. *BMC Pediatrics*, *14*(1), 1–9. https://doi.org/10.1186/1471-2431-14-176

Sharma, D. rajkuma., & Nigam, D. ashis. kumar. (2015). A Comparative Study of Personality Traits of Coaches and Physical Education Teachers. *Journal of Tourism,Hospitality and Sports*, *4*, 7–13.

Sharma, R. (2015). Effect of socioeconomic status on sport performance of national level junior weightlifters. *International Journal of Applied Research*, *1*(5), 212–214.

Sindik, J., & Mihaljević, D. (2011). Socioeconomic Status and Microsocial Structure Within Female Handball Team. *Sportlogia*, *7*(2), 155–167. https://doi.org/10.5550/sgia.110702.en.155s

Singh, Dalbara, Sing, A., & Singh, S. (2013). A comparative study of sports personology between sports-persons and non sports-persons. *International Journal of Behavioral Social and Movement Sciences*, *2*(2), 184–191.

Singh, Davinder. (2015). Mental Toughness and Emotional Maturity in Basketball Performance: Identifying Performance Indicators. *Education and Linguistics Research*, *1*(2), 22. https://doi.org/10.5296/elr.v1i2.8130

Sirin, S. R. (2005). Socioeconomic status and academic achievement: A meta-analytic review of research. *Review of Educational Research*, *75*(3), 417–453. https://doi.org/10.3102/00346543075003417

Sterkowicz-Przybycien, K., Sterkowicz, S., & Zak, S. (2014). Sport skill level and gender with relation to age, physical development and special fitness of the participants of Olympic

volleyball tournament Beijing 2008. *Collegium Antropologicum*, *38*(2), 511–516. http://www.ncbi.nlm.nih.gov/pubmed/25144981

Talyabee, S. R., Moghadam, R. S., & Salimi, M. (2013). The investigation of personality characteristics in athlete and non-athlete students. *Pelagia Research Library European Journal of Experimental Biology*, *3*(3), 254–256. www.pelagiaresearchlibrary.com

Torrijos-Niño, C., Martínez-Vizcaíno, V., Pardo-Guijarro, M. J., García-Prieto, J. C., Arias-Palencia, N. M., & Sánchez-López, M. (2014). Physical fitness, obesity, and academic achievement in schoolchildren. *Journal of Pediatrics*, *165*(1), 104–109. https://doi.org/10.1016/j.jpeds.2014.02.041

Tsunawake, N., Tahara, Y., Moji, K., Muraki, S., Minowa, K., & Yukawa, K. (2003). Body composition and physical fitness of female volleyball and basketball players of the Japan inter-high school championship teams. *Journal of Physiological Anthropology and Applied Human Science*, *22*(4), 195–201. https://doi.org/10.2114/jpa.22.195

Vashisht, R. N., Krishan, K., & Devlal, S. (2005). Physical growth and nutritional status of Garhwali girls. *Indian Journal of Pediatrics*, *72*(7), 573–578. https://doi.org/10.1007/BF02724181

Vitzel, K. F., Fortes, M. A., Marzuca-Nassr, G. N., Scervino, M. V. M., Pinheiro, C. H., Silveira, L. R., & Curi, R. (2018). In vivo electrical stimulation for the assessment of skeletal muscle contractile function in murine models. *Methods in Molecular Biology*, *1735*, 381–395. https://doi.org/10.1007/978-1-4939-7614-0_26

Williams, H. G., Pfeiffer, K. A., O'Neill, J. R., Dowda, M., McIver, K. L., Brown, W. H., & Pate, R. R. (2008). Motor skill performance and physical activity in preschool children. *Obesity*, *16*(6), 1421–1426. https://doi.org/10.1038/oby.2008.214

Xiao Lin Yang, Telama, R., & Laakso, L. (1996). Parents' Physical Activity, Socioeconomic Status and Education as Predictors of Physical Activity and Sport among Children and Youths - A 12-Year Follow-Up Study. *International Review for the Sociology of Sport*, *31*(3), 273–291. https://doi.org/10.1177/101269029603100304

Zuti, W. B., & Corbin, C. B. (1977). Physical fitness norms for college freshmen. *Research Quarterly of the American Alliance for Health, Physical Education and Recreation*, *48*(2), 499–503. https://doi.org/10.1080/10671315.1977.10615453

Web sources

http://www.gslis.utexas.edu/~palmquis/courses/survey.html
http://www.managementstudyguide.com/survey_method.

http://cemca.org/books/chap9.htm http://writing.colostate.edu/guides/research/survey/com2d1.cfm
http://en.wikipedia.org/wiki/Survey_methodology
http://www2.stat.unibo.it/manualisas/stat/chap11.pdf
http://www.ukessays.com/essays/education/english-as-an-additional-languageeducation-essay.php
http://research.acer.edu.au/cgi/viewcontent.cgi?article=1002&context=lsay_conference
http://en.wikipedia.org/wiki?curid=924757

https://www.scribd.com/doc/58056667/Education

http://introductionpsychology.com/intelligence/

http://quizlet.com/29253858/psych-intelligence-quotes-flash-cards/ http://www.iosrjournals.org/iosr-jhss/papers/Vol17-issue5/B01750914.pdf?id=7363 http://idosi.org/mejsr/mejsr6(6)/23.pdf

http://www.preservearticles.com/2011082611873/what-are-the-physiological-andpsychological-reasons-responsible-for-differences-between-students.html

http://questionpaper.org/gender-issues/ http://psychologicalresources.blogspot.com/2011/01/binet-and-developmentalchanges.html http://www.encyclopedia.com/topic/Lewis_Madison_Terman.aspx
https://www.scribd.com/doc/123518792/Research

https://www.scribd.com/doc/228635581/APA-Style-and-Research-Report-Writing
http://teindia.nic.in/mhrd/50yrsedu/g/Z/9I/0Z9I0J01.htm
http://en.wikipedia.org/wiki?curid=14593350

http://www.iosrjournals.org/iosr-jhss/papers/Vol17-issue5/B01750914.pdf?id=7363
http://bcmcollege.blogspot.com/2011/04/study-of-emotional-intelligence-and.html
http://www.slideshare.net/AlexanderDecker/a-study-of-relationship-among-generalanxiety-test-anxiety-and-academic-achievement-of-higher-secondary-students
http://www.docstoc.com/docs/159360605/A-Study-of-Relationship-among-GeneralAnxiety_-Test-Anxiety-and-Academic-Achievement-of-Higher-Secondary-Students
http://www.ijser.org/paper/Influence-of-Socio-Economic-Status-On-AcademicAchievement.html
http://www.teachthought.com/culture/10-theories-on-the-relationship-betweensocioeconomic-status-and-academic-achievement/

http://eric.ed.gov/?id=ED171871

http://www.freepatentsonline.com/article/Canadian-JournalEducation/221205319.html

http://rdc-cdr.ca/socio-economic-status-and-academic-achievement-trajectorieschildhood-adolescence

http://www.questia.com/library/journal/1G1-221205319/socio-economic-status-andacademic-achievement-trajectories

www.researchgate.net/...ability.../0912f505c620dcedb0000000

http://eric.ed.gov/?id=ED045621

http://ejournal.aiaer.net/vol21209/12.%20Dhal%20&%20Thukral.pdf

http://www.google.co.in/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0CB4QFjAA&url=http%3A%2F%2Fejournal.aiaer.net%2Fvol21209%2F12.%2520Dhal%2520%26%2520Thukral.pdf&ei=Dy5XVLqdBOPR7AaQjoDwCQ&usg=AFQjCNH45vQJ0BbdndNAX2QLq8xXLVnIMA&sig2=QDXLICgIW9SQ_TOhprdTMQ&bvm=bv.78677474,d.ZGU